EXCLUSIVE! . . . OSCILLOSCOPE WAVE FORMS . . .

STARTING IN THIS ISSUE

and 2 Alignment Procedures for All FM Receivers

MORE PRACTICAL PHOTOFACT HELP FOR YOU!

PHOTOFACT* FOLDER SET NO. 28

*TRADE MARK

★ ★ ★ CONTENTS ★ ★ ★

TRADE NAME	MODEL	FOLDER NO.
Airline	74WG-2504A, B, C; 74WG-2704A, B, C	4718-1
Belmont	Boulevard 5P113	4718-2
Bendix	847S "Facto Meter"	4718-3
Brunswick	BJ-6836 "Tuscany," C-3300 "Darby"	4718-4
Capitol	T-13	4718-5
Chevrolet	986146	4718-6
Coronado	43-5005	4718-36
Coronado	43-8353, 43-8354	4718-7
David Bogen	2AR, 2RS	4718-8
Dynavox	AP-514 (Ch. AT)	4718-9
Fada	711, 740	4718-10
Firestone (Air Chief)	4-A-10 (Code No. 297-7-RN228)	4718-11
Firestone (Air Chief)	4-A-27	4718-12
Garod	6A-2	4718-13
Globe	7CP-1	4718-14
Globe	553	4718-15
Godfrey	6AD	4718-16
Godfrey	6SM	4718-17
Lafayette	MC11	4718-18
Majestic	5AK731, 5AK780, (Ch. 5B05A)	4718-19
Majestic	12FM475, 12FM778, 12FM779 (Ch. 41201)	4718-20
Masco	MA-20HF	4718-21
Masco	MA-75	4718-22
Monitor	M-500 (Fact. No. 475)	4718-23
Motorola	56X11 (Ch. HS-94)	4718-24
Motorola	57X11, 57X12 (Ch. HS-60)	4718-25
Philco	Record Changer M-7	4718-35
Pilot	T-601 "Pilotuner"	4718-26
Ranger	118	4718-27
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Sound Inc.	MB7E3	4718-31
Sound Inc.	5R2	4718-32
Temple	G-521	4718-33
Truetone	D-1612	4718-34

IN THIS ENVELOPE: Complete Service Information on Philco Model M7 Record Changer

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The PHOTOFACT Servicer

NOVEMBER 1, 1947 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ VOL. 3, No. 28

ROBERT M. ELLIS, *Editor*

NEW WORLD COMING UP!

"That postwar new world we heard so much about a few years ago is beginning to take shape. Probably there is more going on in design headquarters right now than at any time since the early twenties, and that is relative because we're a bigger world.

"The rehash of prewar design is evidently all washed up, and in electronics, as in every industry, the design engineer is the important man in the U. S. A. today.

"Probably the most irrefutable evidence of this is the swelling tide of blueprints and specifications being pushed into design headquarters by customers. It's happening everywhere, resistors, relays, tubes, printed and stamped circuits, high-frequency heaters, plastic molders—everybody put on the hump to build something new to go into something new. It's not the old story of an engineer dodging a stock item to show his individuality. It's new stuff for new products designed from research so vastly advanced by the war.

"Those who criticized industry for putting out camouflaged 1941 cars, radios and all kinds of equipment realize now that such procedure was a valuable economic expedient. It made quick conversion and pecked great holes in a pent-up demand. But, there is enough alertness, even in the car business where demand is still way beyond supply, to see the horizon of a buyers' market. (New car design now going on is sensational.) In radio, they bumped into a buyers' market with a bang this past spring. It is a pleasure to report that the back wall is showing on the overcrowded shelves of sets, and dealers are signing on the line for good new stuff coming this fall.

"But, we're pointing at 1948. Design engineers are at work a year ahead of the retailer. They are pushing now for startlingly new stuff that you will buy for your wife and kids comes Xmas 1948. In the industrial field there is, again, a vast amount of design work which will go into production, inspection and control in the next twelve months.

"At the Instrument Show in Chicago there was reflection everywhere of this new era of redesign. Some seven thousand people (no public admittance) served to reflect by plans explained and orders placed that automatic control is on the industrial docket as the great single factor in beating high material and labor costs.

"The automotive industry is swinging to high-frequency heating with a swoop. Steel mills are getting ready to go into quantity continuous annealing of sheets and tubes. It begins to seem that it is becoming more practical to anneal, braze and case harden in most any size by the use of tubes. Mercury vapor rectifiers are proving to be a solution in extremely high voltage operations, with electron tubes beyond.

"Communication-wise, we have seen a three-stage amplifier that could be hidden in the palm of the hand. Its ceramic base is smaller than a playing card, its capacitors are the size of a button on your shirt, its resistors are paper thin and look like an oblong sardonyx in a dinner ring. Its wiring is printed complete, both sides in pure silver. Its tubes look like ampoules. Yet it works—in extremes of temperature and humidity.

"So, from card-sized amplifiers to continuous annealers of steel plate —and that's quite a gap—electronic devices are being designed into an imposing array of really new equipment."

We reprint this from the September issue of **Electronic Markets* to show you why you should not sell the radio service profession short. In spite of gloomy prophets of doom who preach the extinction of the independent service shop, we contend the future of radio and electronic servicing is brighter than ever—in fact we're darned sure of it! This article tells you why.

**Electronic Markets* is a small monthly booklet published by Electronics Magazine (McGraw-Hill) for management, sales and advertising men, whose interests lie in the future of the electronic industry.

WHEELS WITHIN WHEELS

We have been asked why we do not incorporate schematic breakdowns on the individual circuits occurring on multiband sets in PHOTOFACT diagrams. In view of the fact that all circuit diagrams in PHOTOFACT Folders are redrafted to PHOTOFACT Standard Notation, the possibility of this added service has been considered carefully by our editorial committee.

The purpose of PHOTOFACT Folders is to provide complete accurate and uniform technical data to the professional service technician so that repairs can be completed with maximum ease and speed. In line with this it is our purpose to supply every bit of technical data which will help in locating the condenser, resistor or other defective part that is causing the trouble; and to supply complete alignment and adjustment data which will provide "like new" performance of the set. From the standpoint of the hobbyist or amateur, it is undoubtedly fascinating to dissect radio circuits and to classify oscillators as Hartley, Colpitts, or "what-have-you"; phase invertors as cathodyne, tapped grid-leak, floating paraphrase, etc. However, the average service technician under the busy schedule of having to complete as many repairs as possible per day rarely has time to indulge in such philosophical contemplation. His interest is in finding the defective part as quickly as possible, and our experience is that schematic breakdowns are seldom needed for this service. They only serve to pad a book by adding seldom used pages.

We urge all of our subscribers to compare before they buy their service data. Ask yourself: "Does the technical information service I use provide these features:

1. Is it *complete*—does it give me all the data I need to do the job?
2. Is the information *concise,* or is it padded with useless sales talk that makes needed data harder to find?
3. Is the data *uniform*—the same for all makes and models—or do I have to "dope out" a different layout for each model?
4. Does the data service give me *accurate* replacement listings—or do I have to guess what I should order from my parts distributor's stock?"

If you disagree please write and tell us.

★ ★

OPTIONAL ALIGNMENT METHODS

There are two methods of aligning FM receivers—the visual method, using a sweep frequency signal generator and an oscilloscope; and the meter method using a suitable AM generator and vacuum-tube voltmeter. It is generally conceded in engineering circles that the visual alignment procedure gives the best "line-up" job; but at the present time many shops are not equipped with the necessary apparatus; and considering the cost, it is likely to be some time before all service shops are so equipped. Accordingly, starting in this issue of PHOTOFACT Folders *both* methods of alignment will be presented for all FM receivers.

Some manufacturers at present are giving only the AM generator-vacuum-tube voltmeter method of alignment. On these sets we will work out carefully the visual oscilloscope method for the set; and we will show you by diagrams of actual wave forms how to secure best performance from the set. Similarly, we will originate an AM generator-vacuum-tube voltmeter alignment procedure when this is omitted from the set manufacturers' service bulletin. The only exceptions will occur in those few instances where receiver manufacturers insist that only visual alignment will give satisfactory performance.

Score another benefit from the PHOTOFACT policy of giving you every possible *practical* help with your service work.

COLOR CODING OF LOOP WIRING

In response to the request of several subscribers, we will start showing the color code of loop antenna leads in the schematic diagrams of PHOTOFACT Folders in cases where a definite code is known to exist. There are times, especially when a loop is "unplugged" by a customer, where this information will prove of extreme value.

At the same time, subscribers must be cautioned to take all wire color code information with a grain of salt, whether applying to loop leads, battery connections, transformers, or "what-have-you." Manufacturers do run out of stock on wire; and naturally if they are long on red wire and short on blue, red will be used. Their only other alternative, shutting down production until the proper color wire can be secured, can hardly be classed as logical or profitable. Accordingly, you may find an occasional exception to our published color code information. We will take our data from the sample sets used to produce the PHOTOFACT Folders, but we cannot be sure that all receivers in the field are the same as the samples examined in our laboratory.

★ ★

FIELD EXPERIENCES

Here is your opportunity for passing practical service experiences to others for the benefit of all. For every service "Field Experience" published, we issue to the author a certificate that is good for one PHOTOFACT Folder Set. Since it is impossible to verify the accuracy of contributions, we cannot be responsible for either the diagnosis made of the receiver trouble, or the results which will be obtained by following the suggested repair routine. All contributions become the property of Howard W. Sams & Co., Inc.

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110-VOLT PILOT LAMPS

"On sets using a 110-volt, 7-watt pilot bulb, noise may be encountered when the set is shaken or the volume turned up. The source may be discovered to be the pilot bulb which, although burning all right, makes a noise when tapped. We, at this shop, think it is due to loose filaments in the lamp. It may be necessary to try several new bulbs before one is found that is quiet enough for a replacement. When trying the new bulbs be sure the socket clip is grounded to its proper place on the chassis.

"Incidentally, if it is difficult to get these bulbs, try retailers of electric stoves as the same bulb is used as a pilot light in many stoves."

Submitted by: Mr. Bill Kiewel, Farley Radio, Crookston, Minnesota

★ ★

TELEVISION GHOSTS

TELEVISION GHOSTS

"Ghosts" in the television image are usually caused by one of the following:

(1) Multi-path reception. The signal reaches the antenna by two or more paths. One is the desired or direct signal and the others are due to reflections from buildings. The reflected signal reaches the set later due to the longer path and causes the ghost. Such ghosts can usually be either eliminated or reduced by using a directional antenna, adjusted for minimum ghosts. In some locations, it will be evident that if reflections are arriving from two different directions, it will be impossible to eliminate both and a compromise will have to be accepted.

(2) Improper matching of antenna to set. Reflection of signal back to the antenna if matching is far off. This will cause ghosts on all stations and can be eliminated by proper lead-in and termination at set. This is covered in manufacturer's instructions and data from antenna manufacturers.

Excerpt from staff members' correspondence.

★ ★

UTAH AUTOMATIC RECORD CHANGER 550

Photofact Set 8

"Complaint: Record does not drop cleanly, but wobbles on spindle ledge.

"Cause: Lateral play in spindle (movement toward and away from shelf), caused by loose fit of bottom of Spindle No. 8 in bore of Spindle Bearing Assembly No. 19 (lower photo, Page No. 6).

"Remedy: Remove Tinnerman Fastener No. 58, insert shim between Spindle No. 8 and Bore of No. 19 to take up play, and replace No. 58.

"Sometimes an additional adjustment for distance between Spindle and shelf must then be made as per remedy No. 1, Page 4."

Submitted by: Mr. C. W. Battels, Battels Radio-Electronics Service, 559 Wooster Avenue, Akron 7, Ohio

ZENITH 5G003 (Ch 5C40)

With Selenium Rectifier

"Complaint: Fades out on AC after 15 or 20 minutes of operation; plays all right on battery.

"Remedy: Replace selenium rectifier even if it tests o.k."

Submitted by: Stanley E. Davin, Davin Radio Service, 2014 Yemans Avenue, Hamtramck 12, Michigan

★ ★

RCA 65X1 AND 65X2

Photofact 464-30, Set 4

"Nearly normal room volume with volume control at minimum and frequency distortion with the control in the middle range were the indications.

"The brown and black leads were interchanged inside the second i.f. transformer causing two of the r.f. by-pass plates to act as a coupling condenser between the top of the control and the a.f. grid. I use a razor blade slipped between the mica sheets and an ohmmeter to locate the lead connected to each plate of the trimmer-bypass assembly. The correction of this trouble is obvious from the cause."

Submitted by: Mr. Philip H. Alden, 2401 Ulrich Ave., Dayton 6, Ohio.

★ ★

GENERAL ELECTRIC 250 PORTABLE

Photofact 464-13, Set 4

"Complaint: Severe hum.

"The trouble was traced to the spring type ground lug connected to the battery negative. A wire run from this lug to the 1LH4 socket ground does the trick."

Submitted by: Landis Radio Service, Battle Creek, Iowa.

★ ★

PHILCO 46-250, CODE 122

"A customer brought one in a few days ago and complained of a loud hum. Immediately, we thought it had a defective filter condenser or a shorted output tube. However, after checking, these were found o.k. All voltages were found to be normal. After experimenting a bit with all new tubes in the set, we disconnected the lead from the antenna coil to ground and the hum stopped. Upon checking the coil, we found it was shorted. After we melted all the wax off, we found the short was visible. We corrected this and coated the coil with 'Q' dope and the radio was o.k."

Submitted by: Mr. Merrill B. Bahnson, Firestone Home & Auto Supplies, Rock Rapids, Iowa

★ ★

HOWARD 920

Photofact 465-7, Set 5

"If this set has low volume check the screen grid resistor, 3.3 megohms, of the 1S5 tube (PHOTOFACT Item 27). On the last four of these sets coming to me, this resistor was open."

Submitted by: Mr. E. F. Reeve, Mendenhall, Miss.

★ ★

PHILCO 46-420

Photofact 466-22, Set 6

"Complaint: Intermittent or whistles; and only locals can be received.

"Cause: We found a broken one megohm resistor, Item 22, between prongs No. 4 and No. 6 of the 7C7 socket. This breakage apparently resulted from the movement of the socket prongs when a tube was removed, since the resistor leads were clipped very short. The remedy of course was to install a new resistor with longer leads."

Submitted by Mr. R. E. Dailey, Daileys Modern Repair Service, 414 West Third Street, Texarkansas, Texas

PUBLICATION DATES

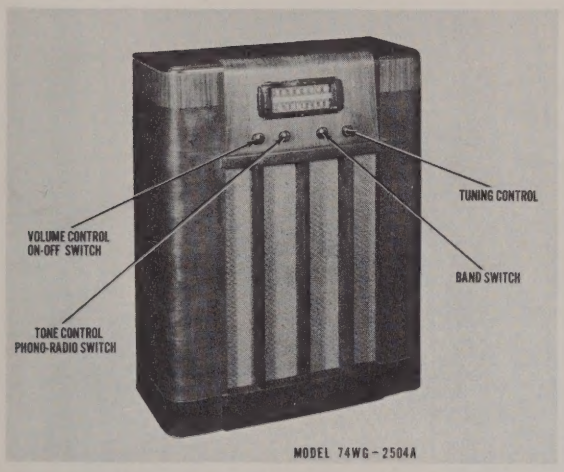
When will other sets of PHOTOFACT Folders be published?

Volume 3—Set No. 29 ..... **December 1**

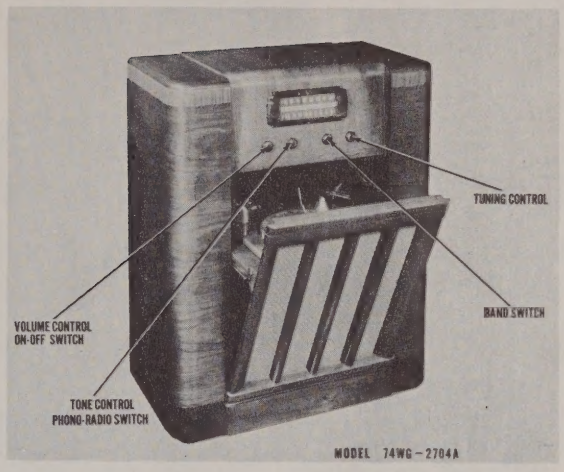
Volume 3—Set No. 30 ..... **December 15**

If you have been unable to get any issues of PHOTOFACT *Folder Sets, send your order and money directly to us and we will see that you are supplied.*

AIRLINE MODELS
74WG-2504A, 74WG-2704A



MODEL 74WG-2504A



MODEL 74WG-2704A

TRADE NAME	Airline Models 74WG-2504A,B,C & 74WG-2704A,B,C
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	AC Operated 2 Band Superheterodyne Receiver with Loop Antenna (Models 74WG-2704A, B, C have Record Changer Included)
TUBES (SIX)	Types, 6SA7 Converter, 6SK7 IF Amp., 6SF7 IF Amp.-Det.-AVC, 6SJ7 1st AF Amp., 6V6GT Power Output, 6X5GT Rectifier.
POWER SUPPLY	105-125 Volts AC RATING .360 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1600KC **SHORT WAVE** 5.75 - 18.3MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin #8 of 6SA7. Low side to chassis.	455KC	BC (counter-clock-wise)	Tuning capacitor fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
2	50 MMF.	High side to ant. lead. Low side to chassis.	1620KC	"	"	"	A5	" " " "
3	50 MMF.	"	1400KC	"	Tune for maximum output.	"	A6	" " " "
4	50 MMF.	"	600KC	"	"	"	A7	Rock tuning capacitor & adjust for maximum output. Repeat Steps 2, 3 & 4 until no further improvement can be made.
5	400 ohm carbon res.	"	18.3MC	SW (clock-wise)	Tuning capacitor fully open.	"	A8	Adjust for maximum output
6	"	"	16.0MC	"	Tune for maximum output.	"	A9	Rock tuning cap. and adjust for maximum output.
7		Loop	1400KC	BC	"	"	A6	Reassemble chassis in cabinet. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Set pointer at 1400KC mark on dial.

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1947 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	6SA7	6SA7	6N	
2	IF Amp.	6SK7	6SK7	8N	
3	IF Amp. Det.-AVC	6SF7	6SF7	7AZ	
4	1st AF Amp.	6SJ7	6SJ7	8N	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA: AIRLINE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	450	45X346	FP346	DY-314	EL-424*		UP9DJ53*	◓ Filter
B	40	450							■ "
C	20	25							▲ Cathode Bypass
8	.004	600	F66402	TP407	S-6-004	TC-24	684-004	DT6D4	Output Plate Bypass‡
9	.2	400	D67204	TP429	S-4-2	TC-2	484-.2	DT4P2	RF Bypass Pwr. Supply#
10	.01	400	D66103	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
11	.004	400	D66402	TP407	S-6-004	TC-24	484-004	DT6D4	Tone Comp.
12	.025	400	D64253	TP451	S-6-03	TC-13	484-025	DT4S25	AF Plate Decoup.
13	.1	400	D67104	TP428	S-4-1	TC-1	484-.1	DT4P1	AF Screen Bypass
14	.005	400	D66502	TP408	S-6-005	TC-25	484-005	DT6D5	Audio Coupling
15	.04	400	D64403	TP425	S-6-04	TC-14	484-04	DT4S4	Tone Comp.
16	.04	400	D66403	TP425	S-6-04	TC-14	484-04	DT4S4	IF Screen Bypass
17	.05	200	B66503	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
18	.04	400	D66403	TP425	S-6-04	TC-14	484-04	DT4S4	Conv. Screen Bypass
19	.0005	200	B66501	TP403	S-6-0005	TC-35	1468-0005	DT6T5	RF Coupling
20	.00475	180	46X289						Fixed Pad Sw.
21	470	500	47X467	MC245	MO.5-35	1FM-35	1468-0005	5W5T5	AF Plate Bypass
22A	50	300	47X112	MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Diode Filter
B	50	300		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	" "
23	47	500	47X463	MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Tone Comp.
24	47	500	47X463	MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	IF Coupling
25	68	500	47X466	MC230	MO8.5-47	MS-47	1469-00007	5W5Q7	Osc. Grid

*Parallel sections to obtain desired capacity.
#Not used in issue "B" and "C" chassis.
‡Issue B and C chassis uses Pt. No. H66402 .004 @ 800 V.

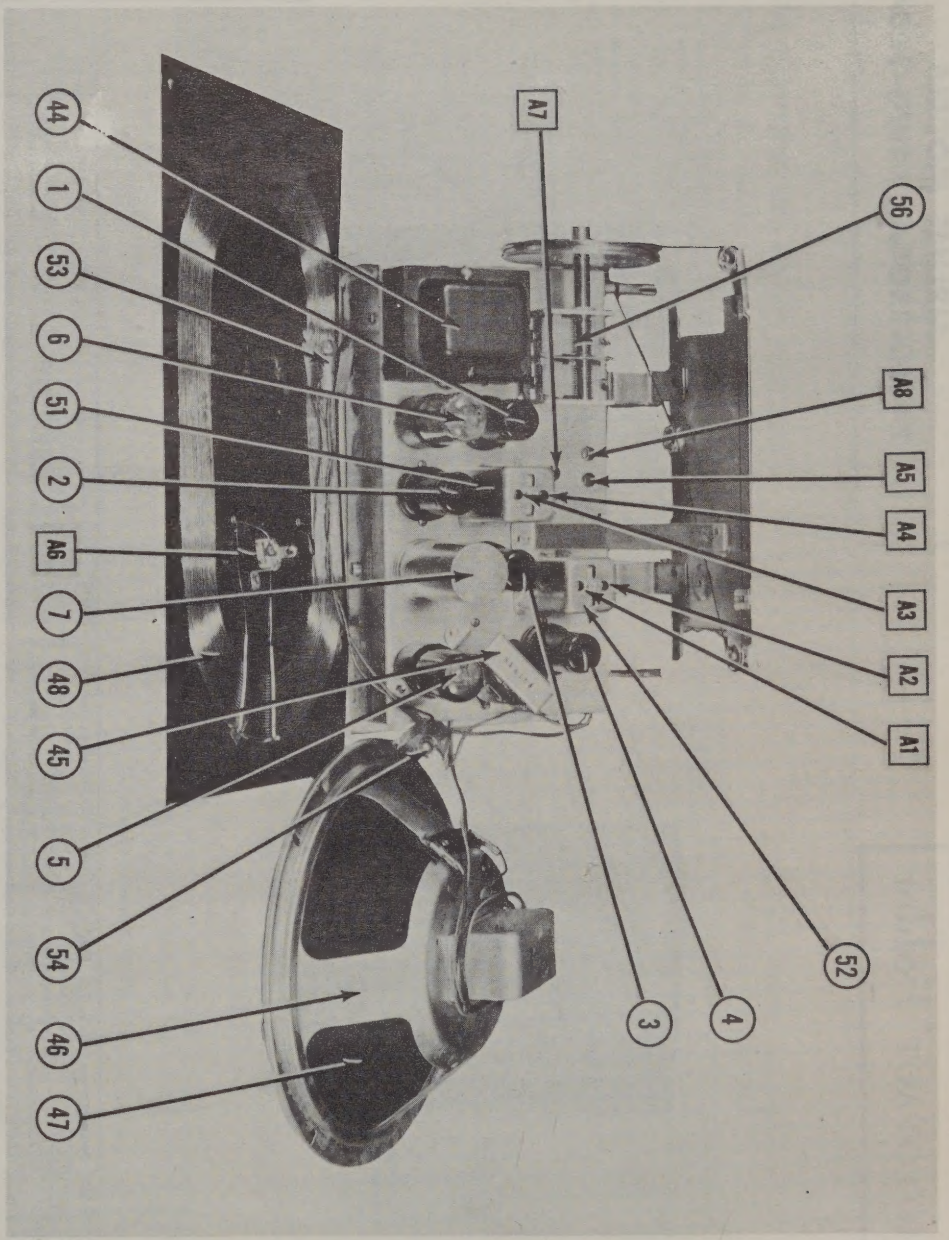
CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: AIRLINE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
26A	500KΩ	½	36X358	TM227	D13-133X	AT-78	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 26A per instructions
C	Switch		" "	M-26	41	SW-A	" " " " "
27	3 Meg.	½	40X276				Tone Control and Radio-Phono Switch

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	IDENTIFICATION CODES
28	2.2 Meg.	½	B85225	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
29	39KΩ	½	B84393	BTS-39K	Or.-White-Or. Oscillator Grid
30	39KΩ	1	C84393	BTA-39K	Or.-White-Or. Converter Screen Dropping
31	39KΩ	1	C84393	BTA-39K	Or.-White-Or. IF Screen Dropping
32	2200Ω	½	B84222	BTS-2200	Red-Red-Red IF Plate Load
33	1 Meg.	½	B85105	BTS-1 Meg.	Br.-Blk.-Grn. IF Grid
34	2.2 Meg.	½	B85225	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
35	47KΩ	½	B85473	BTS-47K	Yl.-Vi.-Or. Diode Filter
36	15KΩ	½	B84153	BTS-15K	Br.-Grn.-Or. Tone Compensation
37	10 Meg.	½	B85106	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
38	470KΩ	½	B85474	BTS-470K	Yl.-Vi.-Yl. AF Screen Dropping
39	33KΩ	½	B84333	BTS-33K	Or.-Or.-Or. AF Plate Load
40	82KΩ	½	B84823	BTS-82K	Gray-Red-Or. AF Plate Decoupling
41	470KΩ	½	B85474	BTS-470K	Yl.-Vi.-Yl. Output Grid
42	270Ω	1	C84271	BW-1-270	Red-Vi.-Br. Output Cathode
43	1800Ω	2	D84182	BT-2-1800	Br.-Gray-Red Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	AIRLINE PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
44	117V AC @ .36A	485V CT @ .06A	6.35V AC @ 2.5A		53X232			

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
45	6000Ω	3.7Ω	475Ω	1.1Ω	51X134	A-3849	T22886	A-2902	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRLINE PART No.	JENSEN PART No.		
46	FIELD PM	VC IMP. 3.7Ω	12A476	ST-119† Mod. P10-T		†Replace output transformer to match 8Ω voice coil.
47	CONE DIA. 9-3/4"	VC DIA. 5/8"	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRLINE PART No.	MEISSNER PART No.	
48	Loop Ant.	0Ω	.5Ω	26A474		
49	SW Ant.Coil	.01Ω	.01Ω	9A1917	14-1044	
50A	BC Osc.Coil	.3Ω	.5Ω	9A1918		50A & B wound on same form.
B	SW Osc.Coil	.1Ω	.01Ω			
51	Input IF	21Ω	21Ω	9A1814	16-6658	
52	Output IF	20Ω	18Ω	9A1815	16-6660	

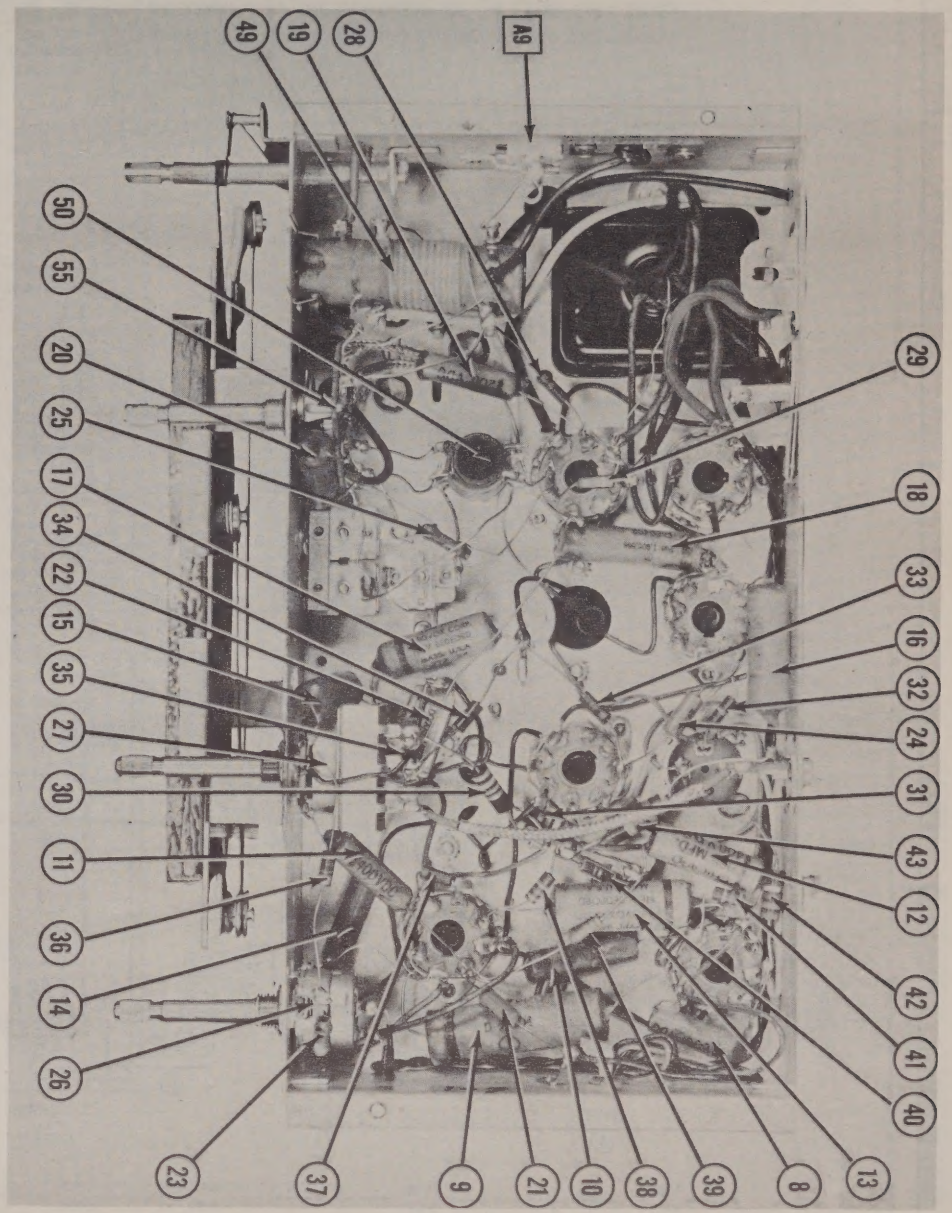
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					AIRLINE PART No.		
53A	Bayonet	7.5V	0.2A	White			Type 51 Issue A & B
B	"	6.8V	.15	Blue	7A103		Type 47 Issue "C"
54A	"	7.5V	0.2	White			Type 51 Issue A & B
B	"	6.8V	.15	Blue	7A103		Type 47 Issue "C"

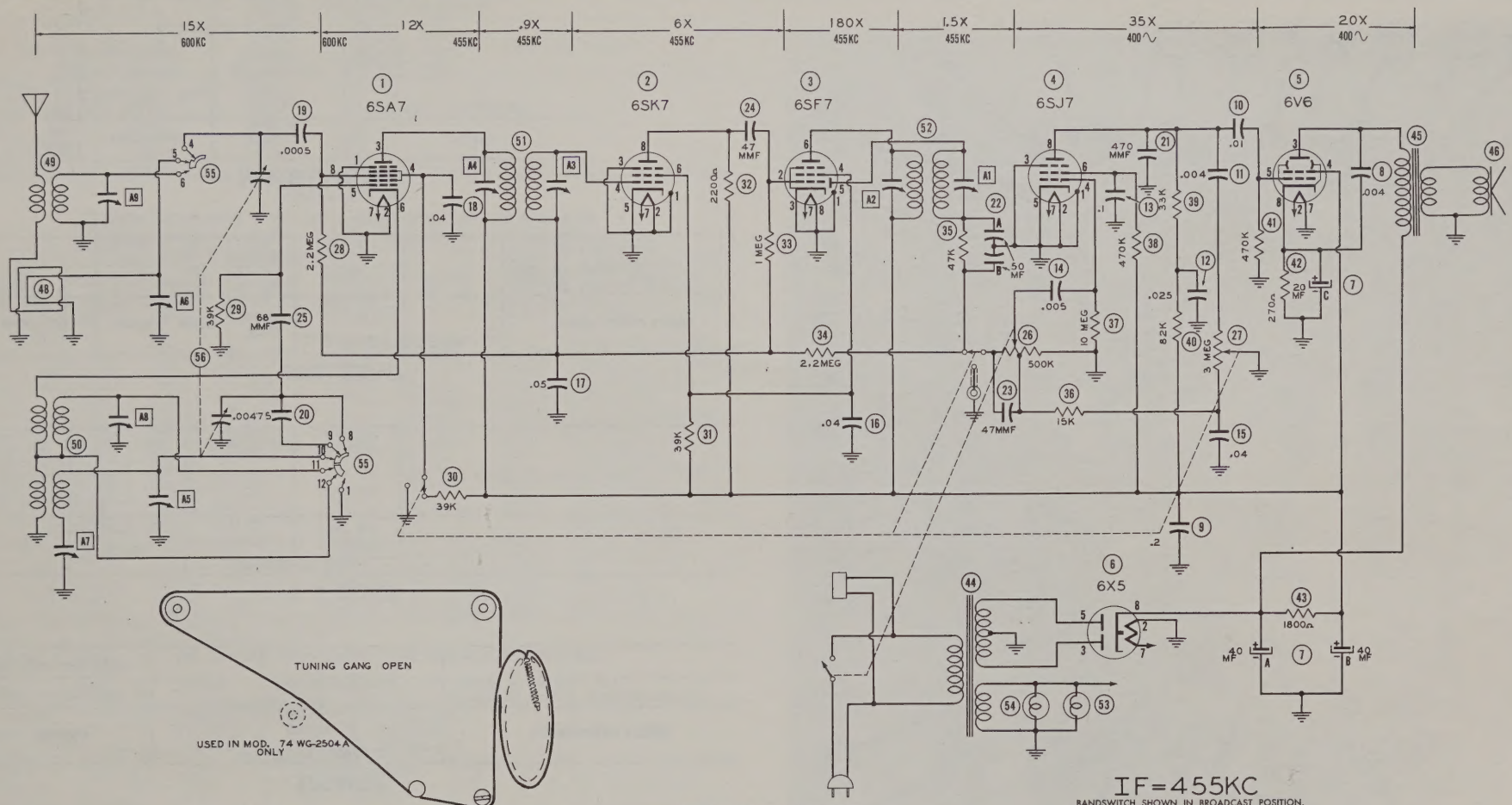
MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
55	Band Switch	2A372	(14-474MMF, 12-402MMF)
56	2 Gang Var. Cap.	14A196	
A5 A8	Dual Trimmer	17A109	{BC Osc. Adj. {SW Osc. Adj.
A6	Trimmer Cap.	17A235	BC Ant. Adj.
A7	" "	17A155	BC Osc. Padder
A9	" "	17A164	SW Ant. Adj.
	Dial Glass	58X690	Issue A & B
	" "	58X696	Issue C

CHASSIS—BOTTOM VIEW



DATE 11/47 SET #28 FOLDER #4716-1



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0V.	0V.	220VDC	62VDC	-10VDC§	0V.	6.4VAC	0V.
2	6SK7	0V.	0V.	0V.	-.15VDC	0V.	66VDC	6.4VAC	205VDC
3	6SF7	0V.	-.15VDC	0V.	66VDC	-.2VDC	220VDC	6.4VAC	0V.
4	6SJ7	0V.	0V.	0V.	-.6VDC	0V.	45VDC	6.4VAC	55VDC
5	6V6GT	0V.	6.4VAC	260VDC	220VDC	0V.	0V.	0V.	11VDC
6	6X5GT	0V.	0V.	240VAC	0V.	240VAC	0V.	6.4VAC	280VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0Ω	0Ω	60KΩ	100KΩ	39KΩ	.5Ω	.1Ω	5 Meg.
2	6SK7	0Ω	0Ω	0Ω	3 Meg.	0Ω	100KΩ	.1Ω	60KΩ
3	6SF7	0Ω	4 Meg.	0Ω	100KΩ	520KΩ	60KΩ	.1Ω	0Ω
4	6SJ7	0Ω	0Ω	0Ω	10 Meg.	0Ω	530KΩ	.1Ω	175KΩ
5	6V6GT	0Ω	.1Ω	60KΩ	60KΩ	480KΩ	.4Ω	0Ω	270Ω
6	6X5GT	INF.	0Ω	180Ω	INF.	190Ω	INF.	.1Ω	60KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4718-1

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

BELMONT MODEL BOULEVARD
5P113 BATTERY OPERATED

BELMONT MODEL 5P113

TRADE NAME	Belmont, Model "Boulevard" 5P113
MANUFACTURER	Belmont Radio Corp., 5921 W. Dickens Ave., Chicago 39, Ill.
TYPE SET	Battery Operated Personal Portable Superheterodyne Receiver.
TUBES (FIVE)	Types, 2E32 RF Amp., 2G22 Converter, 2E32 IF Amp., 2E42 Det.-AVC-AF, 2E36 Power Output.
POWER SUPPLY	1½ Volt "A" Supply & 22½ Volt "B" Supply
RATING	200 MA @ 1.5 Volts DC & 2.2 MA @ 22.5 Volts DC
TUNING RANGE—BROADCAST	540-1625KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Disconnect purple lead from cap. (6). Connect output meter from cap. (6) to chassis. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to grid of 2G22. Low side to chassis.	455KC	Tuning slugs out completely.	See pre-alignment notes.	A1,A2, A3,A4.	Adjust for maximum output.
2	.1 MFD.	"	1625KC	"	"	A5	" " " "
3	.1 MFD.	"	1400KC	Set pointer 1-7/32" from center of tuning shaft.	"	A6	Adjust for maximum output. Repeat Steps 2 & 3 until no further improvement can be made.
4	10MMFD.	High side to both orange and purple leads of ant. socket. Low side to chassis.	1625KC	Tuning slugs out completely.	"	A7,A8	Adjust for maximum output.
5	10MMFD.	"	1400KC	Tune for maximum output.	"	A9	Adjust for maximum output. Repeat Steps 4 & 5 until no further improvement can be made.

DISASSEMBLY INSTRUCTIONS

1. Remove one screw from each control knob. Remove two control knobs.
2. Remove screw from bottom of case and remove bottom.
3. Remove batteries from set.
4. Remove two screws located under tuning knob. Remove top of case.
5. Slide chassis out through top of case.

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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Printed in U. S. of America
DATE 11/47 SET #28 FOLDER #4718-2

PARTS LIST AND DESCRIPTIONS

BELMONT MODEL "BOULEVARD"
5P113 BATTERY OPERATED

NOTE

DO NOT ATTEMPT TO REPLACE ANY ITEMS EXCEPT THOSE WHICH HAVE PART NUMBERS. FOR ANY OTHER REPAIR WORK THE ENTIRE UNIT SHOULD BE RETURNED TO THE FACTORY.

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		BELMONT PART No.	STANDARD REPLACEMENT		
1	RF Amp.	2E32	2E32		
2	Converter	2G22	2G22		
3	IF Amp.	2E32	2E32		
4	Det.-AVC-AF	2E42	2E42		
5	Power Output	2E36	2E36		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	BELMONT PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6	.03	150	A-8J-10295						Earphone Coupling
7	.005	150	A-8J-10296						Audio Coupling
8	.01	150	A-8J-10297						AF Screen Bypass
9	.01	150	A-8J-10297						Audio Coupling
10	.01	150	A-8J-10297						AVC Filter
11	.01	150	A-8J-10297						" "
12	.03	150	A-8J-10295						RF Bypass Power Supply
13	00005	600	A-8J-10298						AF Plate Bypass
33	40		A-8G-11083						Fixed Trimmer Cer.

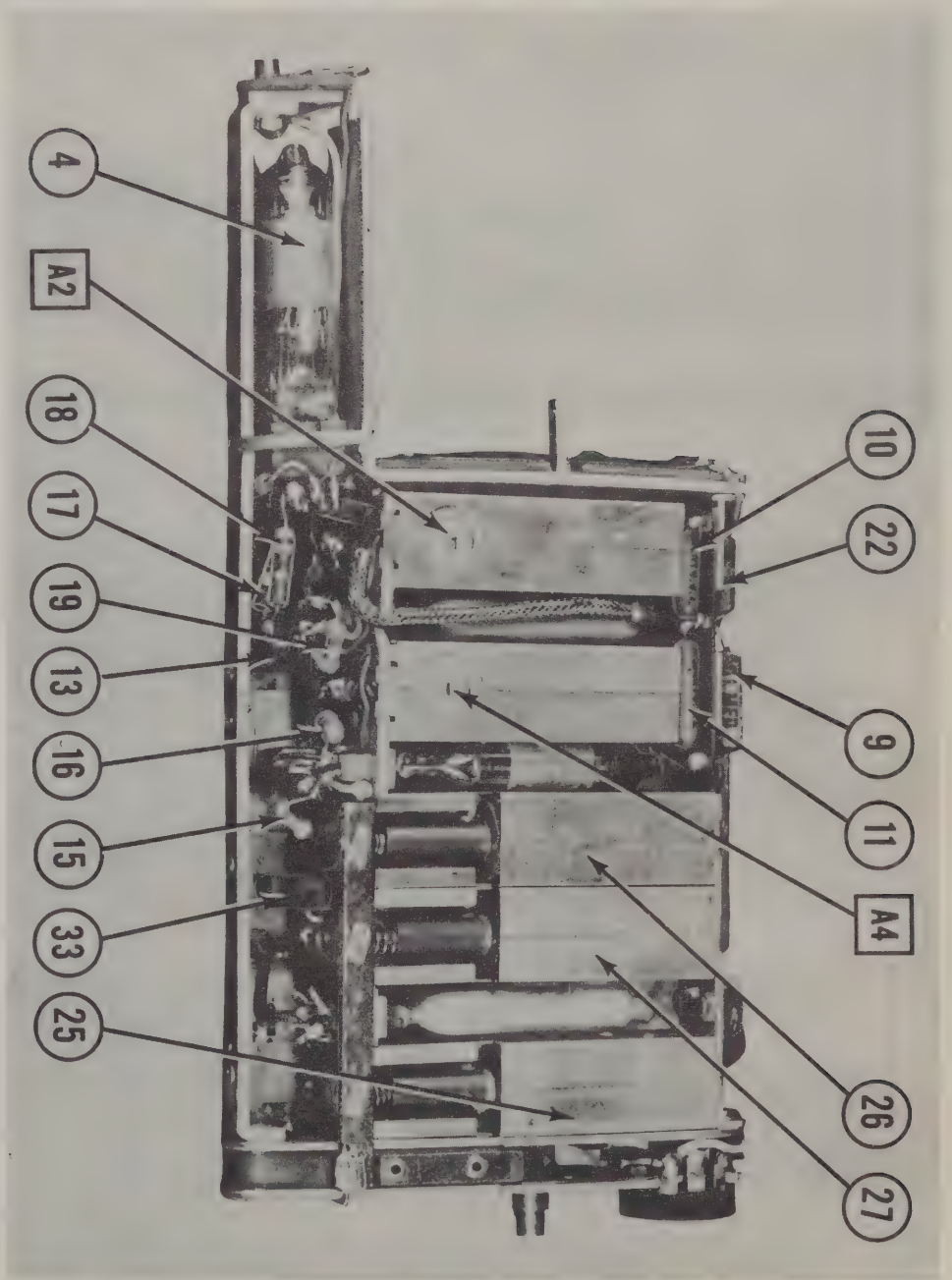
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESIST-ANCE	WATTS	BELMONT PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
14	1 Meg.	½					Volume Control & Sw.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	BELMONT PART No.	IRC PART No.	
15	47KΩ	1/5	C-9B9-82	BTS-47K	Yl.-Vl.-Or. Oscillator Grid
16	330KΩ	1/5	C-9B9-92	BTS-330K	Or.-Or.-Yl. Converter Plate Load
17	1 Meg.	1/3	C-9B3-98	BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
18	4.7 Meg.	1/3	C-9B3-106	BTS-4.7 Meg.	Yl.-Vl.-Grn. AF Screen Dropping
19	330KΩ	1/5	C-9B9-92	BTS-330K	Or.-Or.-Yl. IF Plate Load
20	4.7 Meg.	1/3	C-9B3-106	BTS-4.7 Meg.	Yl.-Vl.-Grn. AVC Network
21	4.7 Meg.	1/3	C-9B3-106	BTS-4.7 Meg.	Yl.-Vl.-Grn. AVC Network
22	10 Meg.	1/3	C-9B3-37	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
23	4.7 Meg.	1/3	C-9B3-106	BTS-4.7 Meg.	Yl.-Vl.-Grn. Output Grid
24	68KΩ	1/5	C-9B9-84	BTS-68K	Blue-Gray-Or. Output Plate Load

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA BELMONT PART No.	REPLACEMENT DATA MEISSNER PART No.	
25	Ant. Coil	26Ω	12Ω			Items 25, 26 & 27 are ganged together and part of tuning assembly.
26	RF Coil		24Ω			
27	Osc. Coil	6Ω	14Ω			
28	Input IF	24Ω	24Ω			
29	Output IF	24Ω				

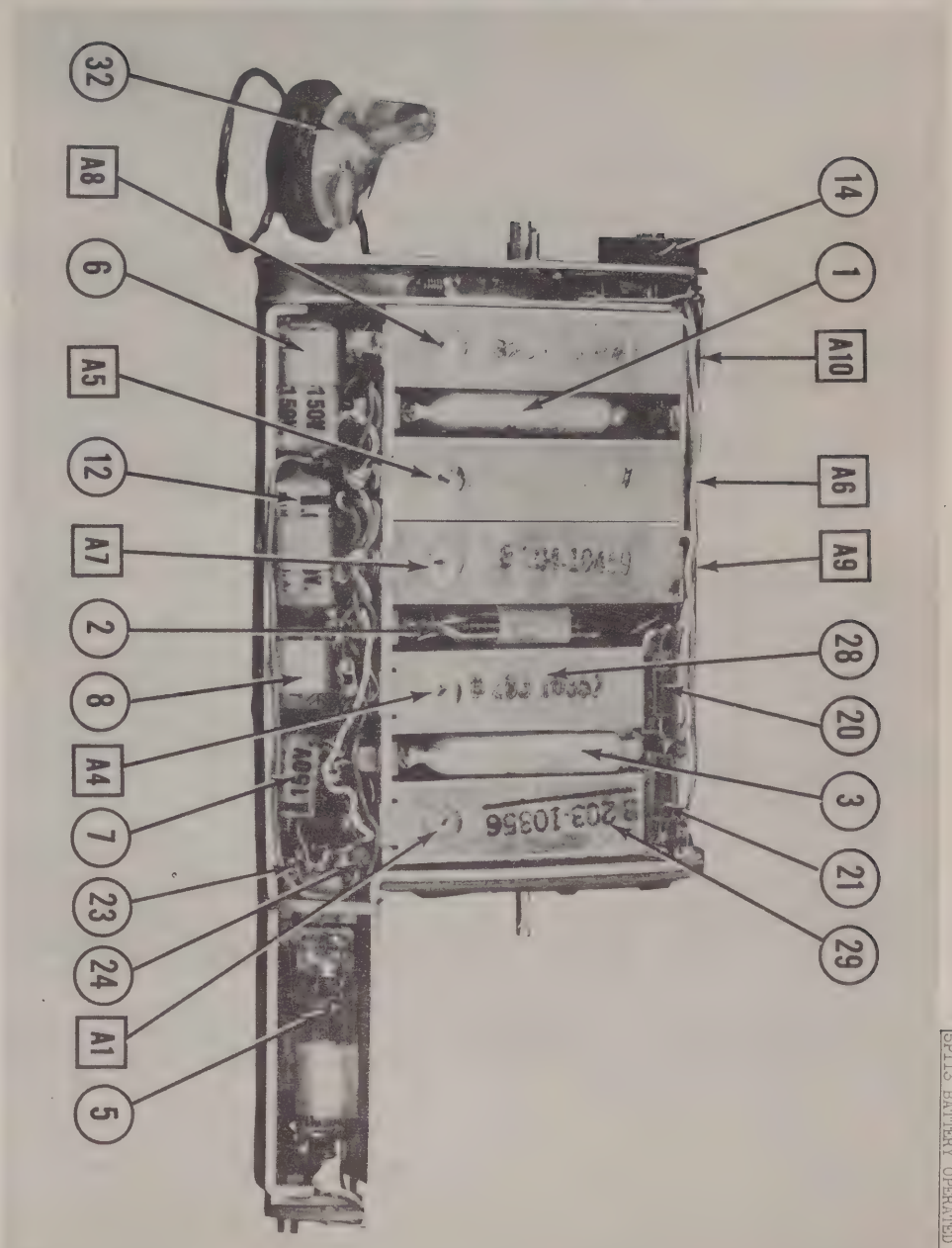
BATTERIES

ITEM No.	VOLTAGE	BELMONT PART No.	EVEREADY "A"	EVEREADY "B"	EVEREADY "A-B"	INSTALLATION NOTES
30	1½V "A"		(2)#1016			2 Used in parallel
31	22½V "B"			#412		

MISCELLANEOUS

ITEM No.	PART NAME	BELMONT PART No.	NOTES
33	Earphone	A-48A-10346	Crystal
	Phone Connector & Cord	A-19B-10354	
	Earpiece	A-5M-10455	Medium
	"	A-5M-10455-1	Small
	"	A-5M-10455-2	Large

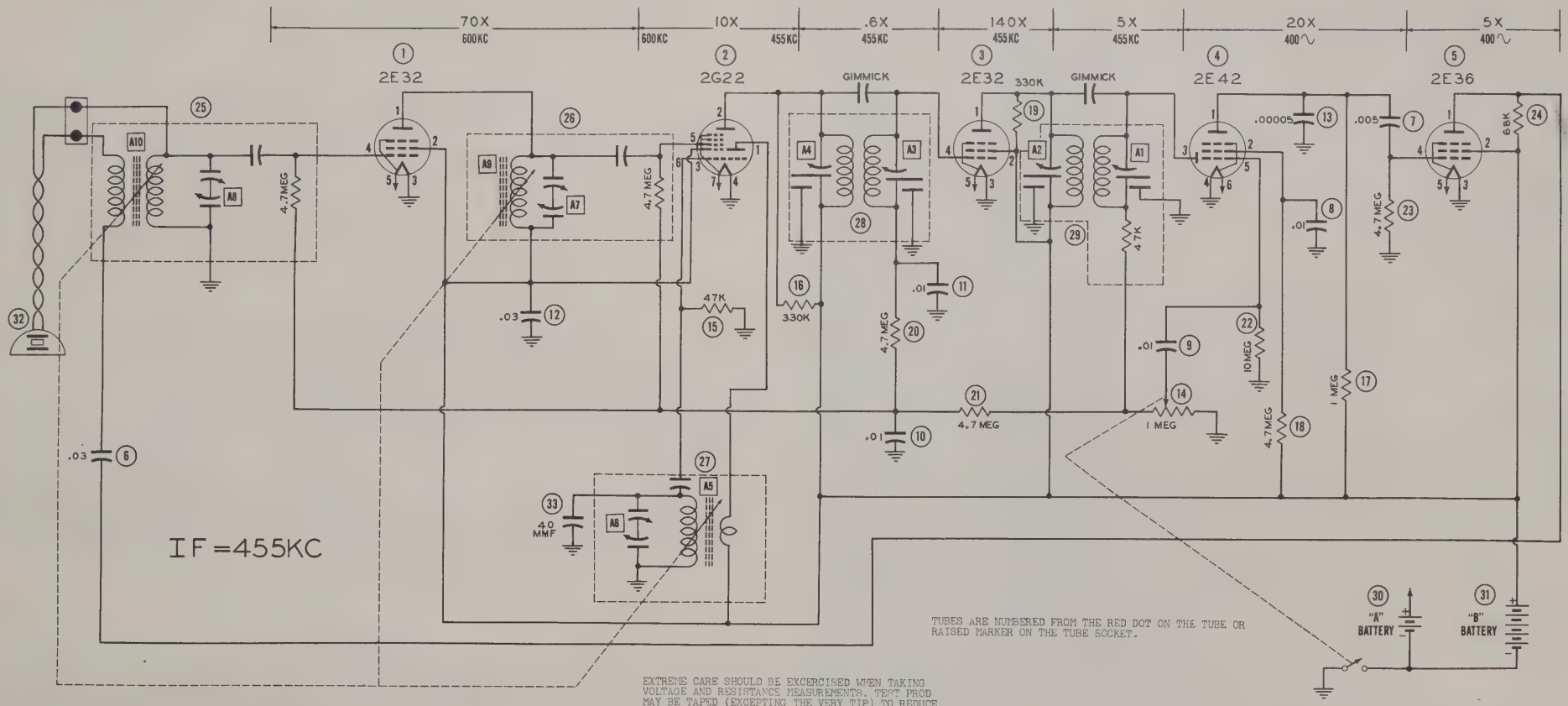
CHASSIS—BOTTOM VIEW



DATE 11/47 SET #23 FOLDER #4718-2

BELMONT MODEL "BOULEVARD" SPLIT BATTERY OPERATED

BELMONT MODEL "BOULEVARD" SPLIT BATTERY OPERATED



EXTREME CARE SHOULD BE EXCERCISED WHEN TAKING VOLTAGE AND RESISTANCE MEASUREMENTS. TEST PROD MAY BE TAPED (EXCEPTING THE VERY TIP) TO REDUCE SLIPPING AND SHORTING OF THE TUBES.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	2E32	21.5VDC	21.5VDC	0V.	-.1VDC	1VDC	-	-
2	2G22	21.5VDC	21.5VDC	-2.3VDC§	0V.	0V.	21.5VDC	1VDC
3	2E32	21.5VDC	21.5VDC	0V.	-.1VDC	1VDC	-	-
4	2E42	8VDC	4VDC	-.1VDC	00V.	0V.	1VDC	-
5	2E36	12VDC	21.5VDC	0V.	-.1VDC	1VDC	-	-

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	2E32	INF.	INF.	0Ω	10 Meg.	*	-	-
2	2G22	INF.	INF.	45KΩ	0Ω	10 Meg.	INF.	*
3	2E32	INF.	INF.	0Ω	10 Meg.	*	-	-
4	2E42	INF.	INF.	1 Meg.	0Ω	10 Meg.	*	-
5	2E36	INF.	INF.	0Ω	5 Meg.	*	-	-

DUE TO ABSENCE OF FILTER CAPACITORS, B+ CIRCUITS WILL READ INF.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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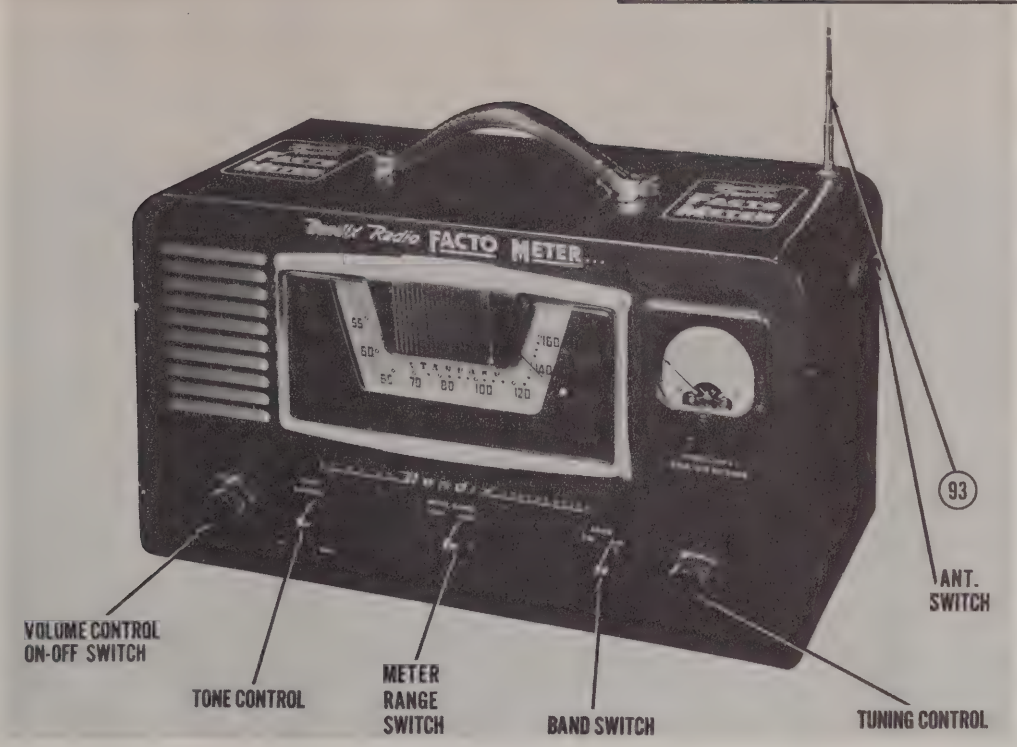
4718-2

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is shorted to chassis during stage gain measurements.

1 - DC Voltage measurements at 20,000 ohms per volt;
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5 - Volume control at maximum, no signal applied for voltage measurements.



BENDIX MODEL 847S

TRADE NAME	Bendix, Model 847S "Facto Meter"
MANUFACTURER	Bendix Radio, Div., Bendix Aviation Corp., Baltimore, Md.
TYPE SET	AC Operated FM-AM Superheterodyne Receiver with Telescopic Antenna
TUBES (EIGHT)	Types, 6AG5 FM RF Amp., 7F8 Converter, 7AH7 1st IF Amp., 7AG7 2nd IF Amp., 6H6 Ratio Detector, 6SQ7 Det.-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY RATING	110-120 Volts AC .540 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC FM 88-108MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last mark after #55 on low freq. end of dial.

Calibration marks are on outer edge of dial. AM marks are dots and FM marks are lines. 580KC dot is near the #60, while the 90MC line is 3/8" from the 580KC dot. The 1475KC dot is opposite the #140, while the 106MC line is 3/4" from the 1475KC dot.

The meter range switch must be left in HIGH position during both AM & FM alignment.

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD.	High side to rear AM stator of tuning cap. Low side to chassis.	455KC	BC (clockwise)	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4, A5,A6.	Short pin #4 of 7F8 to chassis. Adjust for maximum output.
2	200MMF.	High side to AM ant. terminal. Low side to chassis.	580KC	"	580KC reference dot at low freq. end of dial.	"	A7	Remove short from pin #4 of 7F8. Adjust for maximum output.
3	200MMF.	"	1475KC	"	1475KC reference dot at high freq. end of dial.	"	A8,A9	"
4	200MMF.	"	580KC	"	Tune for maximum output.	"	A7	Rock tuning cap. and adjust for maximum output. Repeat Steps 3 and 4 until no further improvement can be made.
5	200MMF.	"	965KC	"	"	"		Check calibration.
6	200MMF.	"	580KC	"	"	"		Check calibration. If calibration is not within 10KC oscillator and antenna gang rotors must be bent.

FOR FM ALIGNMENT PROCEDURE SEE PAGE 8.

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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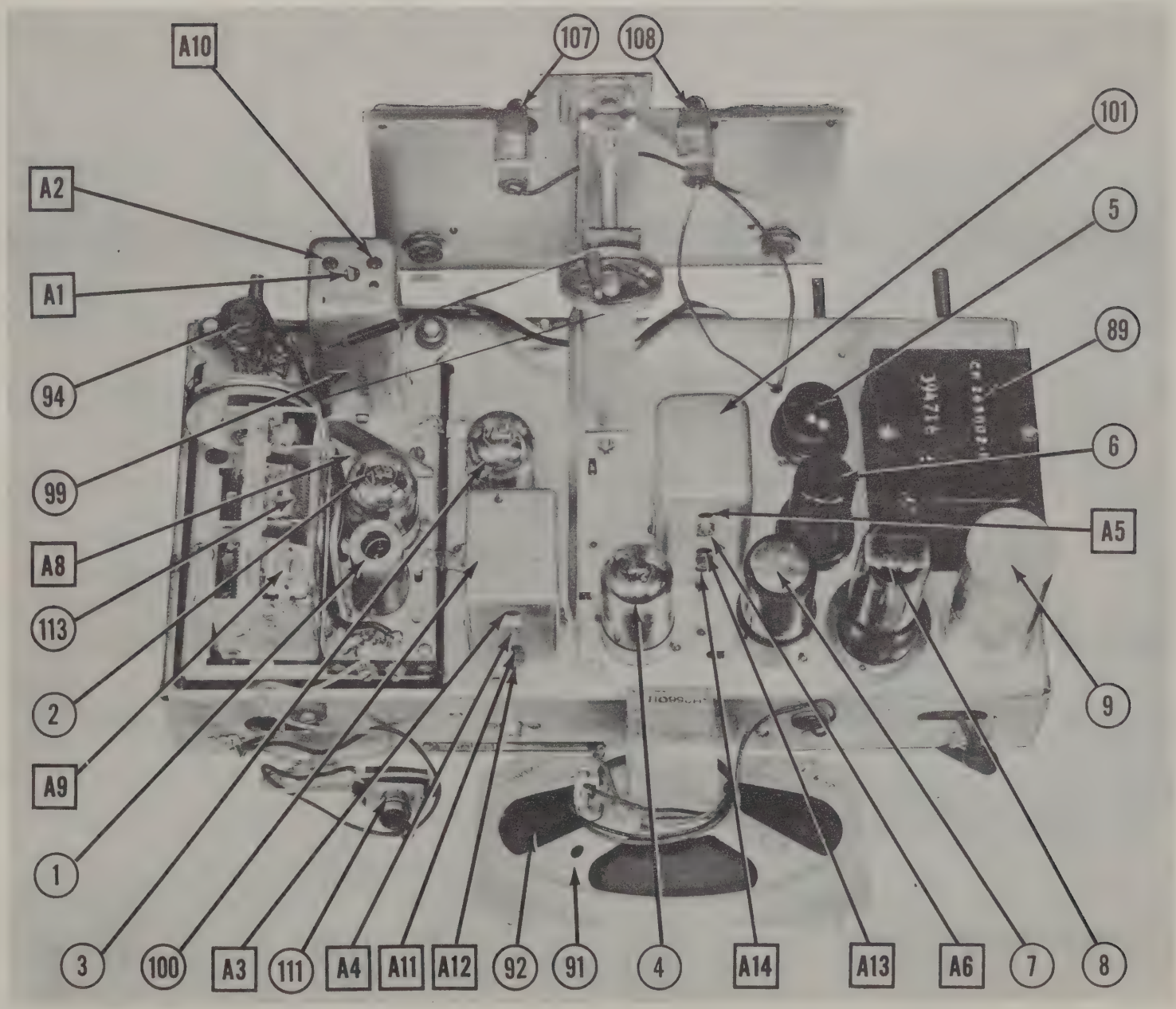
DATE 11/47 SET #28 FOLDER #4718-3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99
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A8
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A3
111
A4
A11
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92
91
4
A14
A13
A6
7
8

SPRAGUE
CN267024-7
A17
A16
A8
A15

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	FM RF Amp.	6AG5	6AG5	7BD	
2	Converter	7F8	7F8	8BW	
3	1st IF Amp.	7AH7	7AH7	8V	
4	2nd IF Amp.	7AG7	7AG7	8V	
5	Ratio Det.	6H6	6H6	7Q	
6	Det.-AVC-AF	6SQ7	6SQ7	8Q	
7	Power Output	6V6GT	6V6GT	7AC	
8	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	BENDIX PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	20	450							◓ Filter
B	20	450	CE3A01	FP444‡	DY-3x20-450	EL-420‡	AF444J	UP222245‡	◘ "
C	20	450							▲ "
10	25	25	CE1T00	TC26	M-25-25	TA-25	PRS25-25	BR252A	Output Cathode Bypass
11	25	25	CE1T00	TC26	M-25-25	TA-25	PRS25-25	BR252A	Ratio Detector Bias
12	3	50	CE1T01	TC40	M-4-150	TA-55	PRS150-4	BR550	" " "
13	.006	600	CP6T20	TP409	S-6-006	TC-26	684-006	DT6D6	Output Plate Bypass
14	.006	600	CP6T20	TP409	S-6-006	TC-26	684-006	DT6D6	Audio Coupling
15	.05	400	CP4T40	TP426	S-4-05	TC-15	484-05	DT4S5	Audio Plate Decoupling
16	.01	400	CP4T31	TP421	S-4-01	TC-11	484-01	DT4S1	Tone Compensation
17	.002	600	CP6T12	TP405	S-6-002	TC-22	684-002	DT6D2	" "
18	.006	600	CP6T20	TP409	S-6-006	TC-26	684-006	DT6D6	Audio Coupling
19	.006	600	CP6T20	TP409	S-6-006	TC-26	684-006	DT6D6	" "
20	.001	200	CP2M10	TP404	S-6-001	TC-21	484-001	DT6D1	RF Bypass
21	.001	200	CP2M10	TP404	S-6-001	TC-21	484-001	DT6D1	Diode Load Capacitor
22	.001	200	CP2M10	TP404	S-6-001	TC-21	484-001	DT6D1	" " "
23	.001	200	CP2M10	TP404	S-6-001	TC-21	484-001	DT6D1	Meter Bypass
24	.05	400	CP4T40	TP426	S-4-05	TC-15	484-05	DT4S5	RF Bypass Power Supply
25	.05	400	CP4T40	TP426	S-4-05	TC-15	484-05	DT4S5	2nd IF Decoupling
26	.05	400	CP4T40	TP426	S-4-05	TC-15	484-05	DT4S5	2nd IF Cathode Bypass
27	.05	400	CP4T40	TP426	S-4-05	TC-15	484-05	DT4S5	1st IF Decoupling
28	.05	400	CP4T40	TP426	S-4-05	TC-15	484-05	DT4S5	Decoupling
29	.01	600	CP6T31	TP410	S-6-01	TC-11	684-01	DT6S1	AVC Network
30	.02	400	CP4M34	TP423	S-4-02	TC-12	484-02	DT4S2	" "
31	.005	600	CP6T18	TP408	S-6-005	TC-25	684-005	DT6D5	Line Bypass
32	.005	600	CP6T18	TP408	S-6-005	TC-25	684-005	DT6D5	" "
33	.01	600	CP6T31	TP410	S-6-01	TC-11	684-01	DT6S1	Filament Bypass
34	.01	400	CP4T31	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Output Coupling
35	.01	400	CP4T31	TP421	S-4-01	TC-11	484-01	DT4S1	Meter Bypass
36	100	500	CM5A22	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Filament Bypass
37	220	500	CM5A30	MC240	M0.5-322	1FM-325	1468-00025	5W5T25	FM AVC Bypass
38	680	300	CM4A42						De-emphasis
39	680	300	CM4A42						"
40	4.7	500	CC0F18	MC205	M0.5-55	MS-55	1468-000005	5W5V5	Mixer Plate Bypass
41	45	500	CC8A30	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	" " "
42	220	500	CM5A30	MC240	M0.5-322	1FM-325	1468-00025	5W5T25	AF Plate Bypass
43	680	300	CM4L42						Osc. Coupling
44	220	500	CM5L30	MC240	M0.5-322	1FM-325	1468-00025	5W5T25	RF Coupling
45	100	500	CM5L22	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid Bypass
46	220	500	CM5L30	MC240	M0.5-322	1FM-325	1468-00025	5W5T25	Osc. Feedback
47	15	500	CM5L03						" "
48	15	500	CC8A24						RF Coupling
49	680	300	CM4A42						RF Screen Bypass
50	45	500	CC8A30	MC225	M0.5-45	1FM-45	1468-00025	5W5Q5	RF Coupling
51	680	300	CM4A42						1st IF Decoupling

‡ Do not use one section.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	BENDIX PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
52A	2 Meg.	½	RV4S10	MRT451	D18-139X	T-116	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 52A per instructions
C	Switch		" "	M38	41	SW-A	" " " "
53A	4 Meg.	½	RV4C00	UC505	D11-141	M-68-Z	Tone Control-Early Production
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 53A per instructions
53A	10 Meg.	½		UC508	D11-143	M-99-Z	Tone Control-Later production
B	Shaft			Not Req.	A	Not Req.	Attach to 53A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	BENDIX PART No.	IRC PART No.	IDENTIFICATION CODES
54	1 Meg.	½	RC1H62	BTS-1 Meg.	Br.-Blk.-Grn. RF Grid
55	68KΩ	½	RC2H46	BTS-68K	Blue-Gray-Or. RF Screen Dropping
56	6800Ω	½	RC2H34	BTS-6800	Blue-Gray-Red FM Oscillator Plate Load
57	68KΩ	½	RC2H46	BTS-68K	Blue-Gray-Or. AM Oscillator Plate Load
58	47KΩ	½	RC2H44	BTS-47K	Yl.-Vi.-Or. Mixer Plate Load
59	1800Ω	½	RC2G27	BTS-1800	Br.-Gray-Red Mixer Cathode
60	22KΩ	½	RC1H40	BTS-22K	Red-Red-Or. Oscillator Grid
61	1 Meg.	½	RC1H62	BTS-1 Meg.	Br.-Blk.-Grn. Mixer Grid
62	470Ω	½	RC1H20	BTS-470	Yl.-Vi.-Br. Decoupling
63	1000Ω	½	RC2H24	BTS-1000	Br.-Blk.-Red 1st IF Decoupling
64	10Ω	½	RC2H00	BW-½-10	Br.-blk.-Blk. Parasitic Suppressor
65	47Ω	½	RC2H08	BW-½-47	Yl.-Vi.-Blk. 1st IF Cathode
66	1000Ω	½	RC2H24	BTS-1000	Br.-Blk.-Red 2nd IF Decoupling
67	220Ω	½	RC2H16	BW-½-220	Red-Red-Br. 2nd IF Cathode
68	1 Meg.	½	RC1H62	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
69	100KΩ	½	RC1H51	BTS-100K	Br.-Blk.-Yl. AVC Network
70	2.2 Meg.	½	RC1H66	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
71	100KΩ	½	RC1H51	BTS-100K	Br.-Blk.-Yl. Diode Filter
72	220KΩ	½	RC1H54	BTS-220K	Red-Red-Yl. D.A.V.C. Network
73	1000Ω	½	RC2H24	BTS-1000	Br.-Blk.-Red Balancing Resistor
74	22KΩ	½	RC1H40	BTS-22K	Red-Red-Or. D.A.V.C. Network
75	33KΩ	½	RC1H42	BTS-33K	Or.-Or.-Or. Ratio Det. Bias Network
76	1000Ω	½	RC2H24	BTS-1000	Br.-Blk.-Red AVC Network
77	220KΩ	½	RC1H54	BTS-220K	Red-Red-Yl. Diode Load
78	470Ω	½	RC1H20	BTS-470	Yl.-Vi.-Br. Meter Sensitivity
79	1 Meg.	½	RC1H62	BTS-1 Meg.	Br.-Blk.-Grn. Meter Sensitivity
80	100KΩ	½	RC1H51	BTS-100K	Br.-Blk.-Yl. Meter Sensitivity
81	100Ω	2	RW2A12	BW-2-100	Br.-Blk.-Br. Filter
82	1500Ω	2	RC4D26	BT-2-1500	Br.-Grn.-Red Filter
83	100KΩ	½	RC1H51	BTS-100K	Br.-Blk.-Yl. Tone Compensation
84	10 Meg.	½	RC1H74	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
85	220KΩ	½	RC1H54	BTS-220K	Red-Red-Yl. AF Plate Load
86	100KΩ	½	RC1H51	BTS-100K	Br.-Blk.-Yl. AF Plate Decoupling
87	470KΩ	½	RC1H58	BTS-470K	Yl.-Vi.-Yl. Output Grid
88	270Ω	1	RW1B34	BW-1-270	Red-Vi.-Br. Output Cathode

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.
89	117V AC @ .54A	520V CT @ .068A	5.0V AC @ 2.0A	6.3V AC @ 2.1A	TP0J00	P-6011*†	T22R02*†	P-2951*†

*Drill new mounting holes.
†Add series resistor to reduce plate voltage.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		BENDIX PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
90	4650Ω	3.7Ω	5.0Ω	.3Ω	TA0C0	A-3[illegible]7	T[illegible]5S6	A-2930	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			BENDIX PART No.	JENSEN PART No.		
	FIELD	VC IMP.				
91	PM	3.7Ω				
	CONE DIA.	VC DIA.				
92	4"x6"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	BENDIX PART No.	MEISSNER PART No.	
93	Telescope Ant.					
94	AM Ant.Coil	5Ω	.2Ω		14-1026	
95	FM Ant.Coil		C2	TR8F00		
96	FM RF Coil		0Ω	TR8P00		
97	AM Osc.Coil		6Ω	L08B00	14-1040	
98	FM Osc.Coil		0Ω	L08F00		
99A	AM Input IF		26Ω	TI0C06		Items 99A & 99B are in same can.
B	FM Input IF		.1Ω			
100A	AM Inter. IF	9Ω$	9Ω#	TI0100		Items 100A & 100B are in same can.
B	FM Inter. IF					
101A	AM OutputIF	13Ω$		TI0D08		" 101A & 101B are in same can.
B	FM Disc.		.1Ω			
102	RF Choke		.1Ω	LF0A01		
103	" "		.1Ω			
104	" "		.1Ω	LF0C0C		
105	" "		.1Ω			
106	" "		.1Ω	1F0A01		

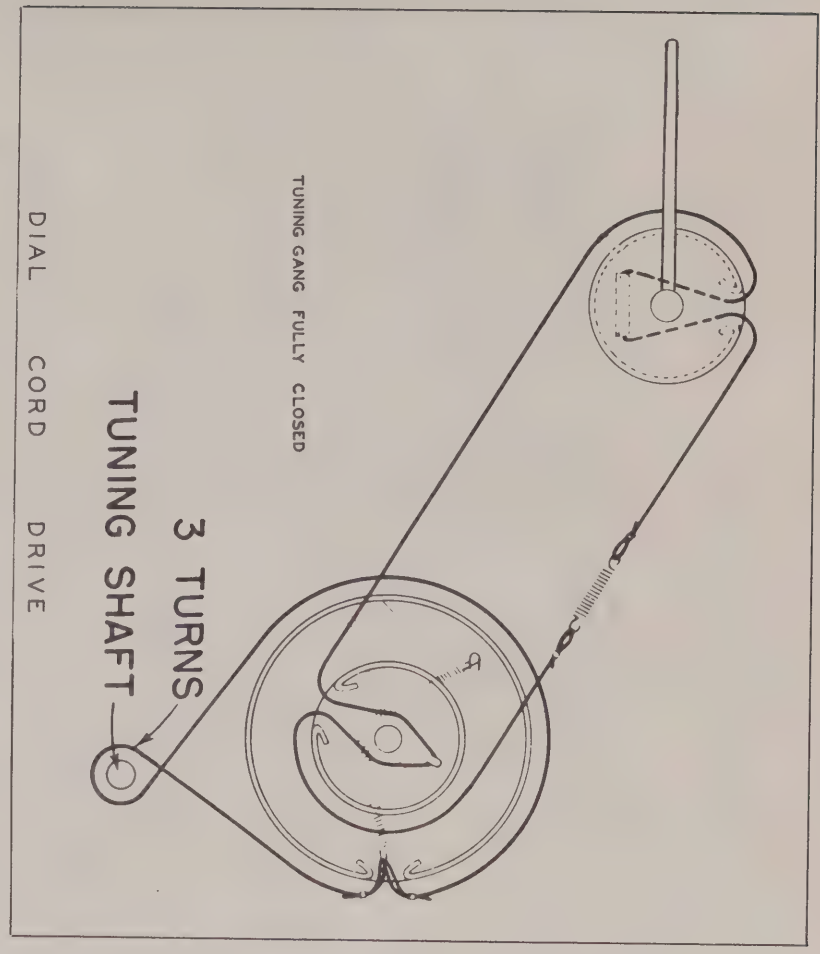
$Includes both pri. #Includes both sec.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					BENDIX PART No.		
107	Bayonet	6-8	0.25A	Blue			Type 44
108	"	"	"	"			"

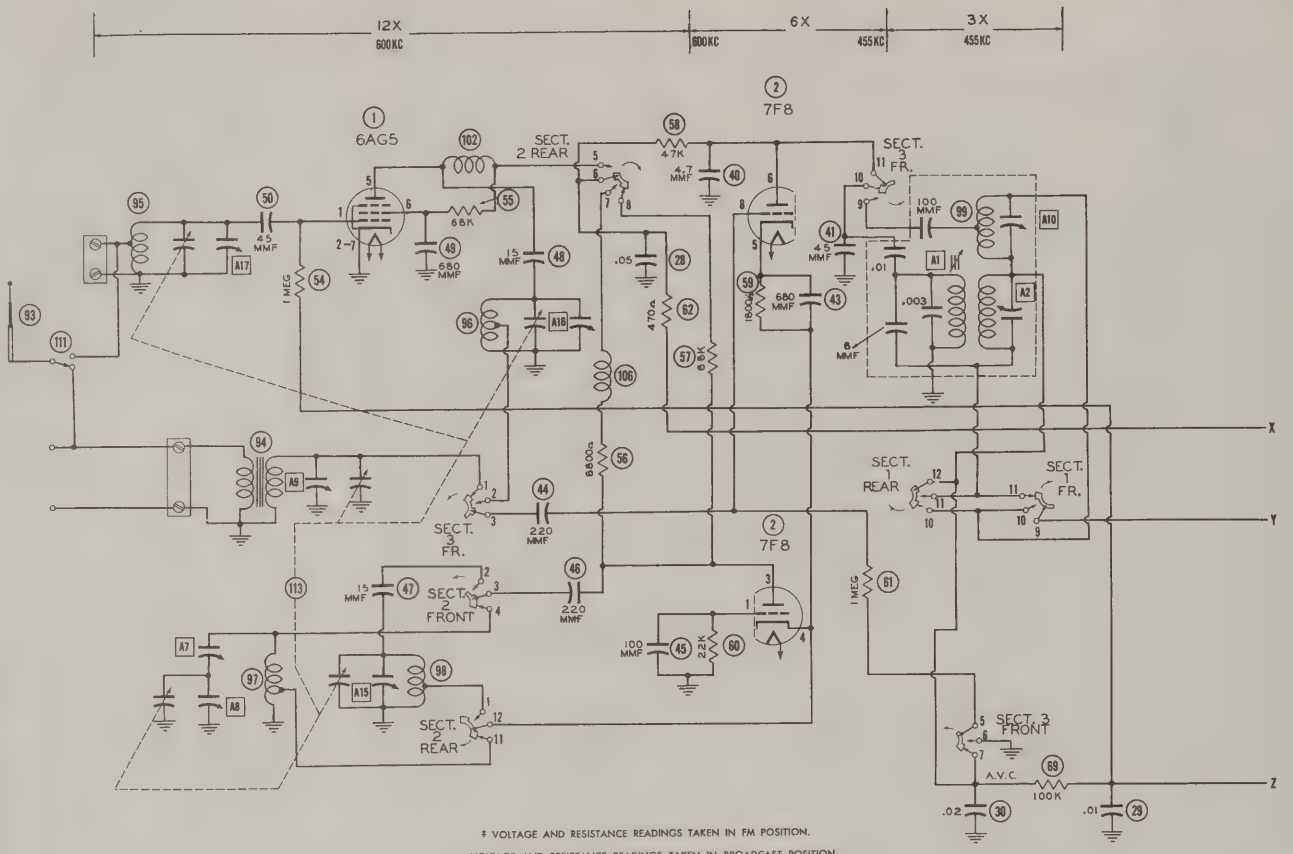
MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
109	Switch		FM-AM } Ganged
110	"		FM-AM }
111	"		Antenna
112	"		Meter Range
113	Tuning Capacitor	CV0D00	



DATE 11/47 SET #28 FOLDER #4718-3

BENDIX MODEL
8475 "Facto Meter" PAGE 5



‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

IF=10.7MC FM

VOLTAGE READINGS

	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡	1	6AG5	-.7VDC	0V.	0V.	6.3VAC	213VDC	210VDC	0V	-
	2	7F8	-3.9VDC§	0V.	78VDC	0V.	3.8VDC	133VDC	6.3VAC	-.7VDC
	3	7AH7	6.3VAC	240VDC	240VDC	0V.	0V.	-.3VDC	.5VDC	0V.
	4	7AG7	6.3VAC	240VDC	240VDC	0V.	0V.	0V.	1.6VDC	0V.
‡	5	6H6	0V.	6.3VAC	16VDC	16VDC	16VDC	17VDC	0V.	17VDC
	6	6BQ7	0V.	-.5VDC	0V.	-.3VDC	-.4VDC	105VDC	6.3VAC	0V.
	7	6V6GT	0V.	6.3VAC	260VDC	240VDC	0V.	0V.	0V.	12VDC
	8	5Y3GT	0V.	280VDC	300VDC	280VAC	0V.	280VAC	0V.	280VDC

IF=455KC AM

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡	1	6AG5	2.5 Meg.	0Ω	0Ω	.1Ω	150KΩ	220KΩ	0Ω	-
	2	7F8	23KΩ	.1Ω	225KΩ	1Ω	1.8KΩ	200KΩ	.2Ω	2.5 Meg.
	3	7AH7	.1Ω	150KΩ	150KΩ	0Ω	0Ω	1.3 Meg.	50Ω	0Ω
	4	7AG7	.1Ω	150KΩ	150KΩ	0Ω	0Ω	0Ω	220Ω	0Ω
‡	5	6H6	0Ω	.1Ω	60KΩ	INF.	INF.	22KΩ	0Ω	23KΩ
	6	6BQ7	0Ω	10 Meg.	0Ω	2.2 Meg.	250KΩ	470KΩ	.1Ω	0Ω
	7	6V6GT	0Ω	.1Ω	150KΩ	150KΩ	500KΩ	INF.	0Ω	270Ω
	8	5Y3GT	0Ω	150KΩ	250KΩ	165Ω	INF.	155Ω	.8Ω	150KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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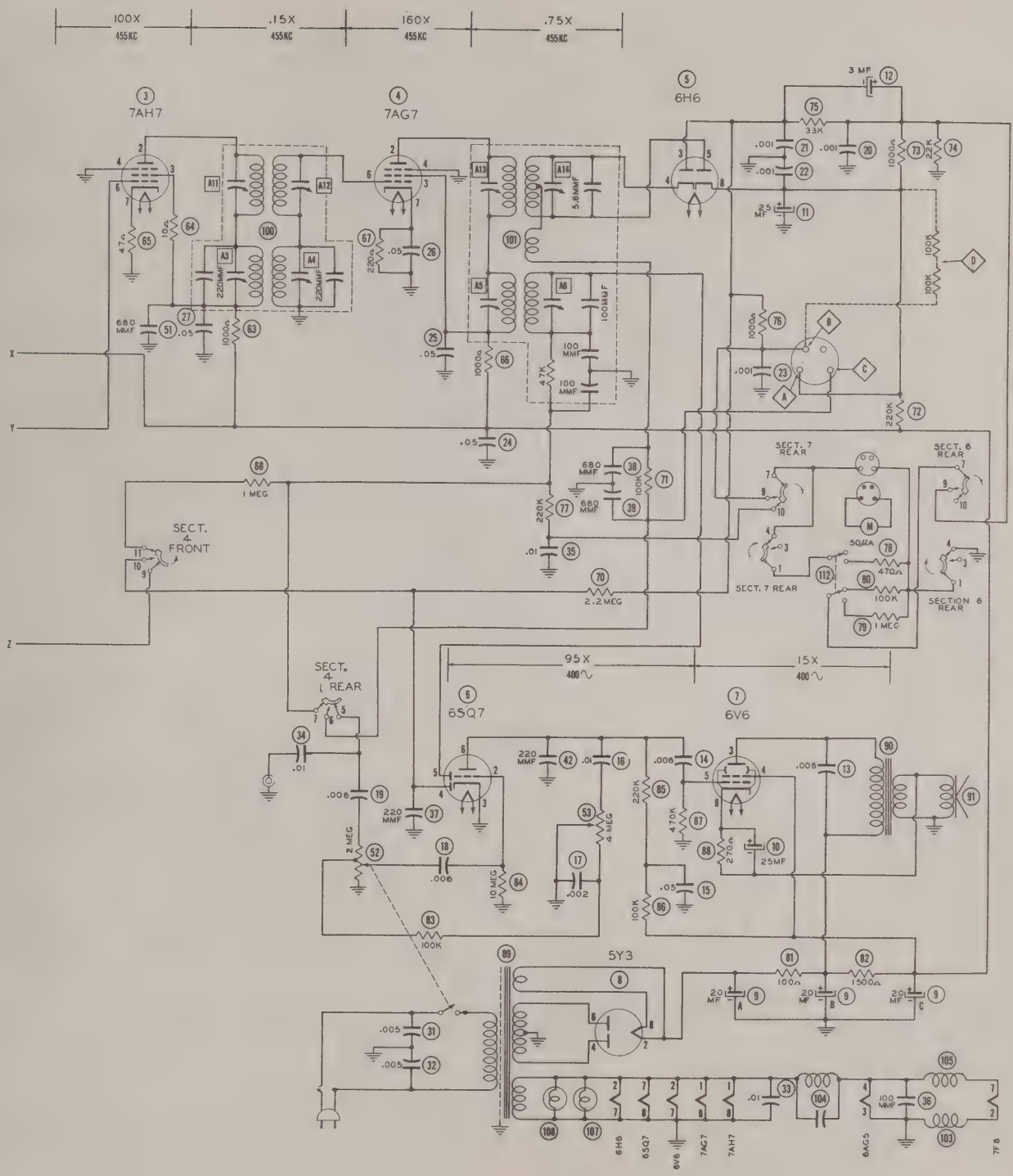
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4718-3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PERFORM AM ALIGNMENT FIRST AS SHOWN ON PAGE 1.

F M ALIGNMENT

FM dummy antenna consists of 300Ω resistor in series with 30Ω resistor with a .01 MFD. capacitor connected to junction of the 300Ω and 30Ω resistors. The 300Ω resistor is connected to the ungrounded terminal of the FM ant. terminal strip. The 30Ω resistor is connected to grounded terminal (left hand terminal) of FM ant. terminal strip. The 30Ω resistor may varied to match the output impedance of the signal generator.

In Steps 11 & 12 if calibration is off use the following procedure for checking and adjusting inductance of coils. Tune to calibration mark. Connect VTVM to AVC. Insert iron core end of tuning wand into osc. coil. If deflection of meter increases compress coil slightly. If deflection decreases insert brass end in osc. coil. If deflection increases, spread turns slightly. Coil is adjusted correctly when upon insertion of either end of tuning wand there is a decrease in deflection of meter. Adjust RF and ant. coils in same manner. After coils have been adjusted repeat alignment of RF trimmers. (Steps 9 & 10).

FM ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Frequency modulate the signal with 60∿, 450KC sweep. Connect the synchronized sweep voltage from the signal generator to the horizontal amplifier. The horizontal sweep voltage may be taken from power line if signal generator does not have a synchronized voltage output. There may be some phase shift encountered between signal generator and scope horizontal sweep resulting in a double trace pattern as in Fig. 2. If provision is made for this in the scope rotate phase control until the two curves coincide as in Fig. 1. If no provision is made for this the same thing may be accomplished by inserting a capacitor of suitable value (.01 to .1 MFD) in series with the horizontal sweep input.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
7	.05 MFD.	High side to center FM stator of tuning cap. Low side to chassis.	10.7MC (unmodulated)	FM (counter-clockwise	Tuning cap. fully open.	DC probe of VTVM connected to pin 1 (point A) of FM test socket. Common to Pin 2 (point B).	A10, A11 A12, A13	Connect a short from front "FM" stator of tuning cap. to chassis. Adjust for maximum deflection in order given and repeat.
						CONNECT SCOPE		
8	.05 MFD.	High side to center FM stator of tuning cap. Low side to chassis.	Approx. 10.7MC (freq. modulated) Adjust sig. gen. until curve of fig. 1 is centered on horizontal scope sweep line.	"	"	Vertical amp. to Pin 4 of FM test socket (Point C). Ground to chassis.	A14	Adjust for maximum symmetry per curve of Fig. 1. It may be necessary to adjust alternately A13 and A14 to obtain best possible curve.
9	FM dummy ant. (see prealign notes.)	High side to .01 MFD cap. of dummy ant. Low side to chassis.	106MC (freq. modulated)	"	106MC reference line at high freq. end of dial.	"	A15	Remove short from "F" stator of Step 7 and adjust until "S" curve is centered on horizontal sweep scope line. Check for image by tuning sig. gen. to 84.6MC. If signal is not heard A15 is adjusted correctly. If signal is heard retune sig. gen. to 106MC and loosen trimmer until next peak is obtained. Then adjust until "S" curve is centered on horizontal scope sweep line and recheck for image.
10	"	"	"	"	"	"	A16, A17	Rock tuning cap. to keep "S" curve centered on horizontal sweep scope line while adjusting A16, A17 for maximum height of curve.
11	"	"	97MC	"	Tune until "S" curve is centered on scope.	"		Check calibration.
12	"	"	90MC	"	"	"	FM Osc. (98) RF (96) & Ant. (95) coils.	Check calibration. If calibration is not within reasonable tolerance at 90M& 97MC adjust coils per pre-alignment notes. If coils must be adjusted then Steps 9 and 10 must repeated.

FM ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

The VTVM used must not be AC-DC, or with ground connect to AC line or through a resistor. The values of the two 100KΩ resistors in Step 8 should be within 1% of each other.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7	.01 MFD.	High side to center FM stator of tuning cap. Low side to chassis.	10.7MC (unmodulated)	FM	Tuning cap. fully open.	DC probe of VTVM connected to Pin 1 (Point A) of FM test socket. Common to Pin 2. (Point B)	A10, A11 A12, A13	Connect short from front FM stator of tuning cap. to chassis. Adjust for maximum deflection in order given and repeat.
8	.01 MFD.	"	"	"	"	Connect 2 100KΩ resistor as shown on schematic. DC probe to point C. Common lead to point D.	A14	IF available use zero center scale VTVM. Adjust for zero deflection. Repeat Step 7 adjusting A13 only for maximum and Step 8 adjusting A14 for zero deflection several tines to assure correct alignment.
9	FM Dummy (See prealignment notes)	High side to .01 MFD cap. of FM dummy ant. Low side to chassis.	106MC (amplitude modulated)	"	106MC reference line at high freq. end of dial.	DC probe of VTVM connected to Pin 1 (Point A) of FM test socket. Common to Pin 2 (Point B)	A15	Remove short from FM stator of Step 13. Adjust for maximum deflection. Check for image as described in Step 9 under visual alignment.
10	"	"	"	"	Tune for maximum deflection.	"	A16, A17	Rock tuning cap. and adjust for maximum deflection.
11	"	"	97MC	"	"	"		Check calibration.
12	"	"	90MC	"	"	"	FM Osc. (98) RF (96) & ant. (95) coils.	Check calibration. If calibration is not within reasonable tolerance at 90 and 97MC adjust FM coils per alignment instructions. If coils must adjusted, then repeat Steps 9 and 10.

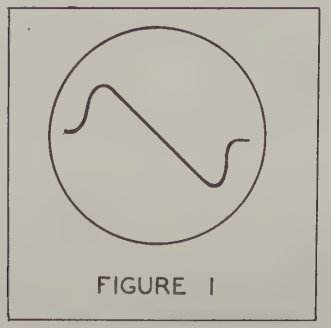


FIGURE 1

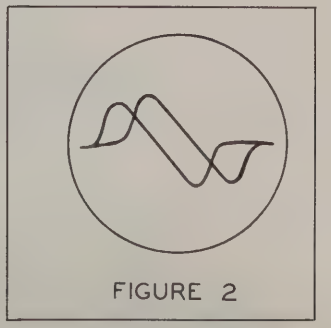
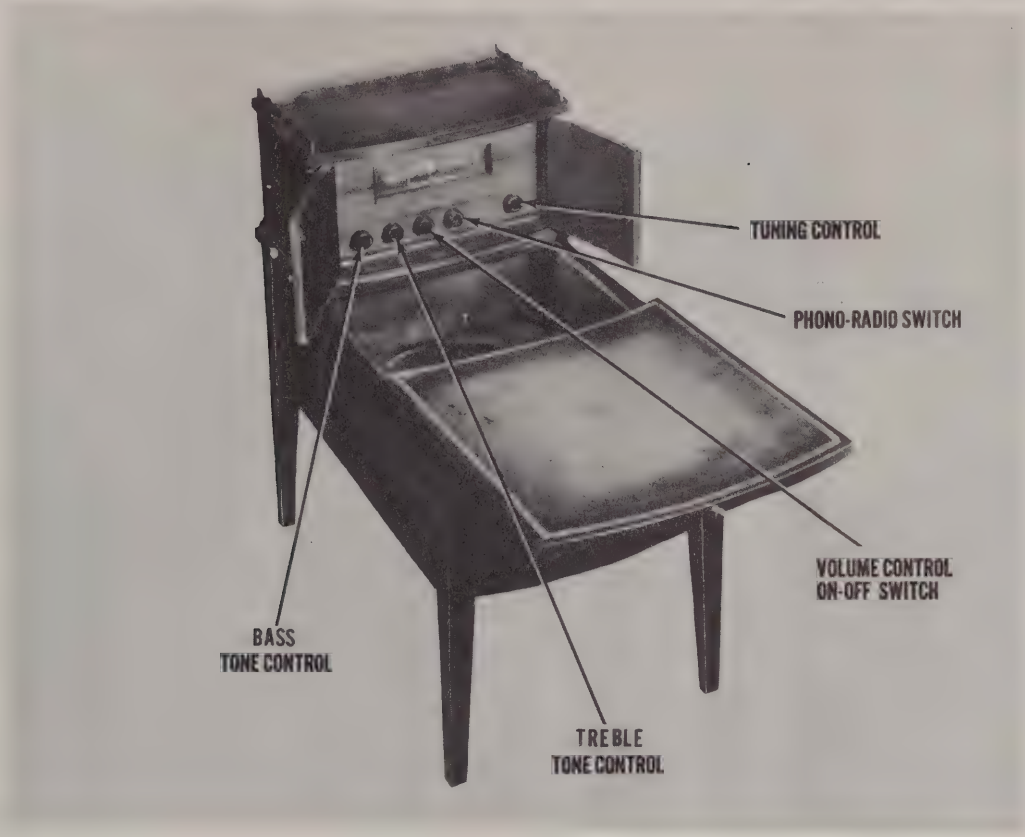


FIGURE 2

BRUNSWICK MODELS BJ-6836
"TUSCANY", C-3300 "DARBY"



BRUNSWICK MODELS BJ-6836
"TUSCANY", C-3300 "DARBY"

BRUNSWICK MODEL BJ-6836

TRADE NAME	Brunswick, Models BJ-6836 "Tuscany", C-3300 "Darby".
MANUFACTURER	Radio & Television, Inc., 244 Madison Ave., New York, N.Y.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne Receiver with Loop Antenna
TUBES (NINE)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SF7 IF Amp.-Det., 6J5GT AF Amp., 6U5 Tuning Eye, 6SN7GT Phase Inverter, (2) 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	530-1750KC RATING .900 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer at end of dial pointer line at low freq. end of dial. If a VTVM is not available, an AC voltmeter may be used across the voice coil as an output indicator. Some models have a powdered iron core in the antenna coil. These are preset at the factory for proper inductance and need not be adjusted. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	V.T.V.M. METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 8 (grid) 6SA7. Low side to chassis.	455KC	Tuning Cap. fully open.	DC probe to junction of cap. 26 and resistor 47. Common lead to chassis.	A1,A2, A3,A4.	Adjust in order given for maximum deflection then repeat.
2	200MMFD	High side to gray loop lead. Low side to chassis.	600KC	600KC	"	A5	Adjust for maximum output.
3	200MMFD	"	1500KC	1500KC	"	A6,A7, A8	Adjust for maximum output. Repeat Steps 1, 2 and 3 until no further increase in output can be obtained.

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		BRUNSWICK PART No.	STANDARD REPLACEMENT		
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.-Det.	6SF7	6SF7	7AZ	
4	AF Amp.	6J5GT	6J5GT	6Q	
5	Tuning Eye	6U5	6U5	6R	
6	Phase Inverter	6SN7GT	6SN7GT	8BD	
7	Power Output	6V6GT	6V6GT	7AC	
8	Power Output	6V6GT	6V6GT	7AC	
9	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	BRUNSWICK PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
10	20	450		TC75	M-20-450	UT-20	PRS450-20	BR2045	Filter
11	20	450		TC75	M-20-450	UT-20	PRS450-20	BR2045	"
12	20	450		TC75	M-20-450	UT-20	PRS450-20	BR2045	"
13	8	450		TC71	M-8-450	UT-8	PRS450-8	BR845	Decoupling
14	8	450		TC71	M-8-450	UT-8	PRS450-8	BR845	"
15	.1	600		TC418	S-6-1	TC-1	684-.1	DT6P1	Line Filter
16	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	Output Plate Bypass
17	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	Output Plate Bypass
18	.1	600		TP410	S-6-1	TC-1	684-.1	DT6P1	Audio Coup.
19	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	" "
20	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	" "
21	1	200		TP422	SDH-4-1M	TC-10	484-1	DT4W1	Tone Comp.
22	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	" "
23	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	Audio Coupling
24	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	IF Plate Decoup.
25	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	IF Screen Bypass
26	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	AVC Filter
27	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Conv. Plate Decoup.
28	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Conv. Screen Bypass
29	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	RF Screen Bypass
30	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	RF Cathode Bypass
31	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	AVC Filter
32	50	500		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Cap-Silver
33	10	500		MC215	MO.5-41	1FM-41	1468-00001	5W5Q1	Fixed Trimmer "

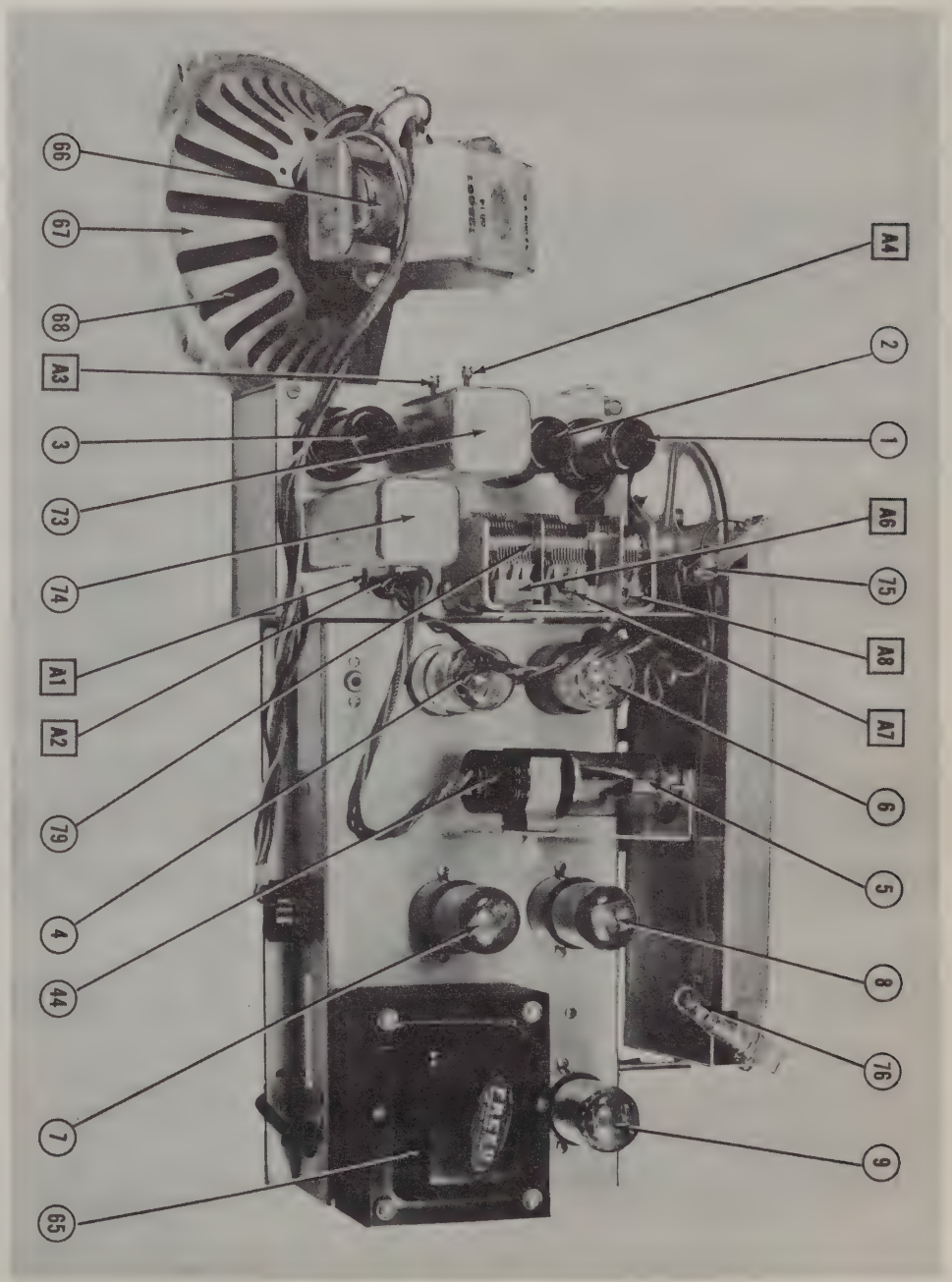
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	BRUNSWICK PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
34A	250KΩ	½		MR44	D13-130	M-64-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 34A per instructions
C	Switch			M26	41	SW-A	" " " " "
35A	250KΩ	½		UM149	D11-130	M-55-S	Bass Control
B	Shaft			SS1	A	Not Req.	Attach to 35A per instructions
36A	1500Ω	½				43-1500	Treble Control
B	Shaft					Not Req.	Attach to 36A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	BRUNSWICK PART No.	IRC PART No.	
37	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AVC Network
38	360Ω	½		BW-½-330	Or.-Blue-Br. RF Cathode
39	100KΩ	½		BTS-100K	Br.-Blk.-Yl. RF Screen Dropping
40	820Ω	½		BTS-820	Gray-Red-Br. Oscillator Coil Shunt

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	BRUNSWICK PART No.	IRC PART No.	
41	24KΩ	½		BTS-22K	Red-Yl.-Or. Oscillator Grid
42	22KΩ	1		BTA-22K	Red-Red-Or. Converter Screen Dropping
43	2000Ω	½		BTS-2200	Red-Blk.-Red Converter Plate Decoupling
44	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Tuning Eye Plate Load
45	56KΩ	½		BTS-56K	Grn.-Blue-Or. IF Screen
46	2000Ω	½		BTS-2200	Red-Blk.-Red IF Plate Decoupling
47	510KΩ	½		BTS-470K	Grn.-Br.-Yl. AVC Network
48	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Diode Load
49	510KΩ	½		BTS-470K	Grn.-Br.-Yl. AF Grid
50	2000Ω	½		BTS-2200	Red-Blk.-Red AF Cathode
51	24KΩ	½		BTS-27K	Red-Yl.-Or. AF Plate Load
52	24KΩ	½		BTS-27K	Red-Yl.-Or. AF Plate Decoupling
53	2000Ω	½		BTS-2200	Red-Blk.-Red Phase Inverter Cathode
54	51KΩ	1		BTA-47K	Grn.-Br.-Or. Phase Inverter Plate Load
55	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Phase Inverter Grid
56	51KΩ	1		BTA-47K	Grn.-Br.-Or. AF Plate Load
57	220KΩ	½		BTS-220K	Red-Red-Yl. Output Grid
58	220KΩ	½		BTS-220K	Red-Red-Yl. Output Grid
59	200Ω	10		AB-200	Output Cathode
60	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Bleeder
61	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. "
62	335Ω	14		DHA-400	Bias - See Note
63	2000Ω	½		BTS-1800	Red-Blk.-Red Tone Compensation
64	10KΩ	½		BTS-10K	Br.-Blk.-Or. Decoupling

Note-On IRC replacement set slider @ 335Ω from one end.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
65	117V AC @ .9A	710V CT @ .110A	5.1V AC @ 2.0A	6.5V AC @ 2.5A		P-6013	T22R06	P-2853

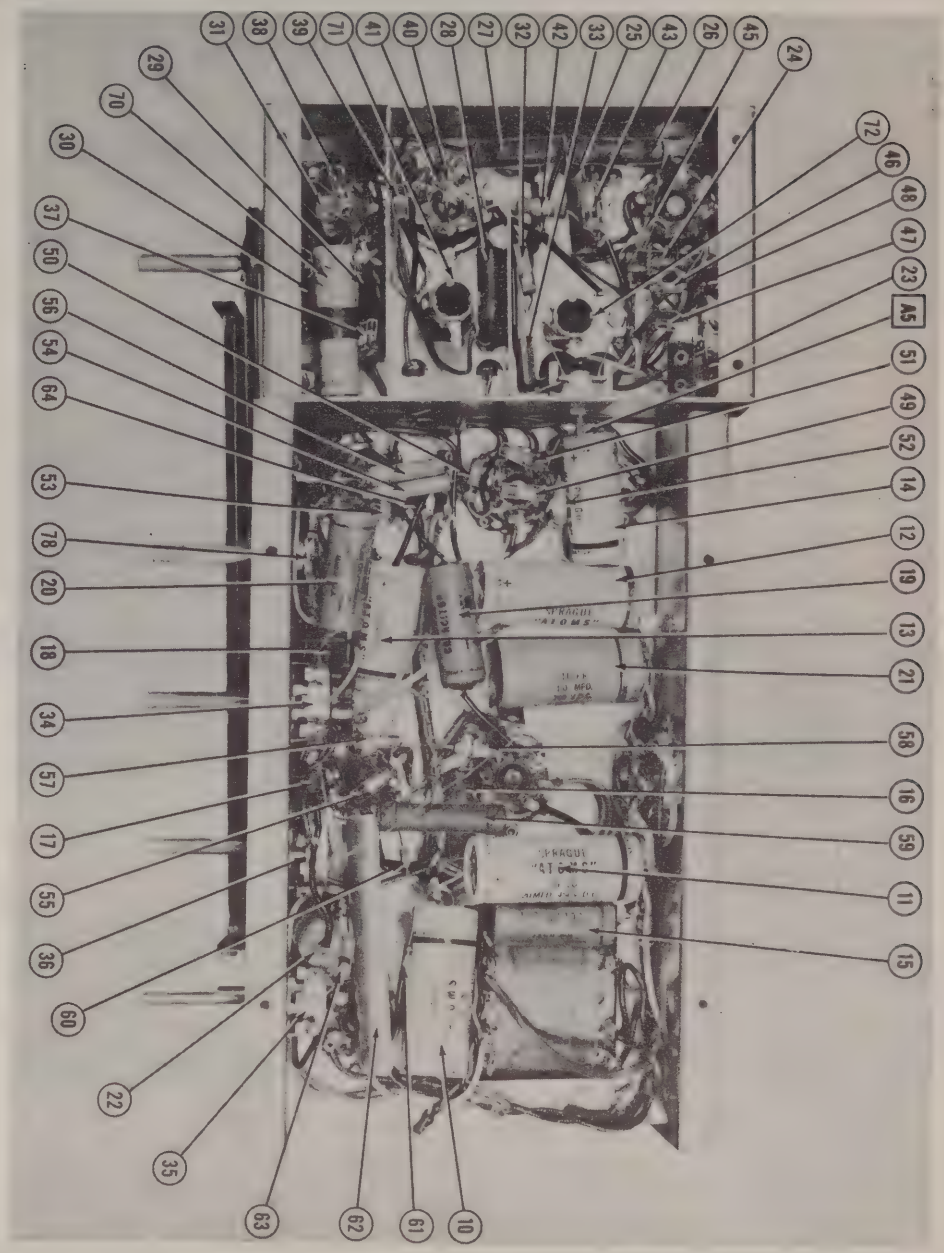
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		BRUNSWICK PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
66	8000Ω CT	3.7Ω	830Ω CT	.6Ω		A-3823	T22S56*	A-2901	*Fabricate new mounting bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			BRUNSWICK PART No.	JENSEN PART No.		
67	FIELD RES. 750Ω	VC IMP. 3.7Ω				
68	CONE DIA. 6-1/8" x 9"	VC DIA. 1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA BRUNSWICK PART No.	REPLACEMENT DATA MEISSNER PART No.	
69	Loop Ant.					
70	Ant. Coil		10Ω	14376		
71	RF Coil	30Ω	13Ω	14377	14-1027	
72	Osc. Coil	2.5Ω	9.5Ω	14376	14-1040	
73	Input IF	16Ω	12Ω	14075	16-5740	
74	Output IF	11Ω		14076	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA BRUNSWICK PART No.		INSTALLATION NOTES
75	Bayonet	6-8	0.15	Brown			Type 47
76	"	"	"	"			" "

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA BRUNSWICK PART No.	REPLACEMENT DATA ASTATIC PART No.	REMARKS
77		QT-M	MLP-1 Original

MISCELLANEOUS

ITEM No.	PART NAME	BRUNSWICK PART No.	NOTES
78	Switch		Radio-Phono
79	3 Gang Var. Cap		31-393 MMF (each section)

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Loosen set screw and remove one control knob.
3. Remove six wood screws holding cover board over back of chassis.
4. Remove speaker plug from chassis.
5. Remove phono-pickup plug from chassis.
6. Disconnect phono-motor plug.
7. Remove four hex head bolts holding chassis in cabinet. Remove from cabinet.
8. Remove nine wood screws holding panel to bottom of cabinet.
9. Loosen three Phillips head screws and remove record changer from cabinet.
10. Remove five wood screws and remove phono mounting board from cabinet.
11. Remove five wood screws holding panel in back of speaker in cabinet. Remove panel from cabinet.
12. Remove four hex nuts from speaker. Remove speaker from cabinet.

RADIO-PHONO SWITCH IN RADIO POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	0V.	-.3VDC	2.8VDC	90VDC	6.5VAC	240VDC
2	6SA7	0V.	0V.	240VDC	80VDC	-4.8VDC§	0V.	6.5VAC	0V.
3	6SF7	0V.	-1.7VDC	0V.	80VDC	-1VDC	220VDC	6.5VAC	0V.
4	6J5GT	0V.	0V.	133VDC	185VDC	0V.	240VDC	6.5VAC	5VDC
6	6SN7GT	0V.	100VDC	3.7VDC	0V.	110VDC	4VDC	6.5VAC	0V.
7	6V6GT	0V.	0V.	230VDC	240VDC	0V.	0V.	6.5VAC	14VDC
8	6V6GT	0V.	0V.	230VDC	240VDC	0V.	0V.	6.5VAC	14VDC
9	5Y3GT	-33VDC	330VDC	0V.	360VAC	0V.	360VAC	0V.	330VDC

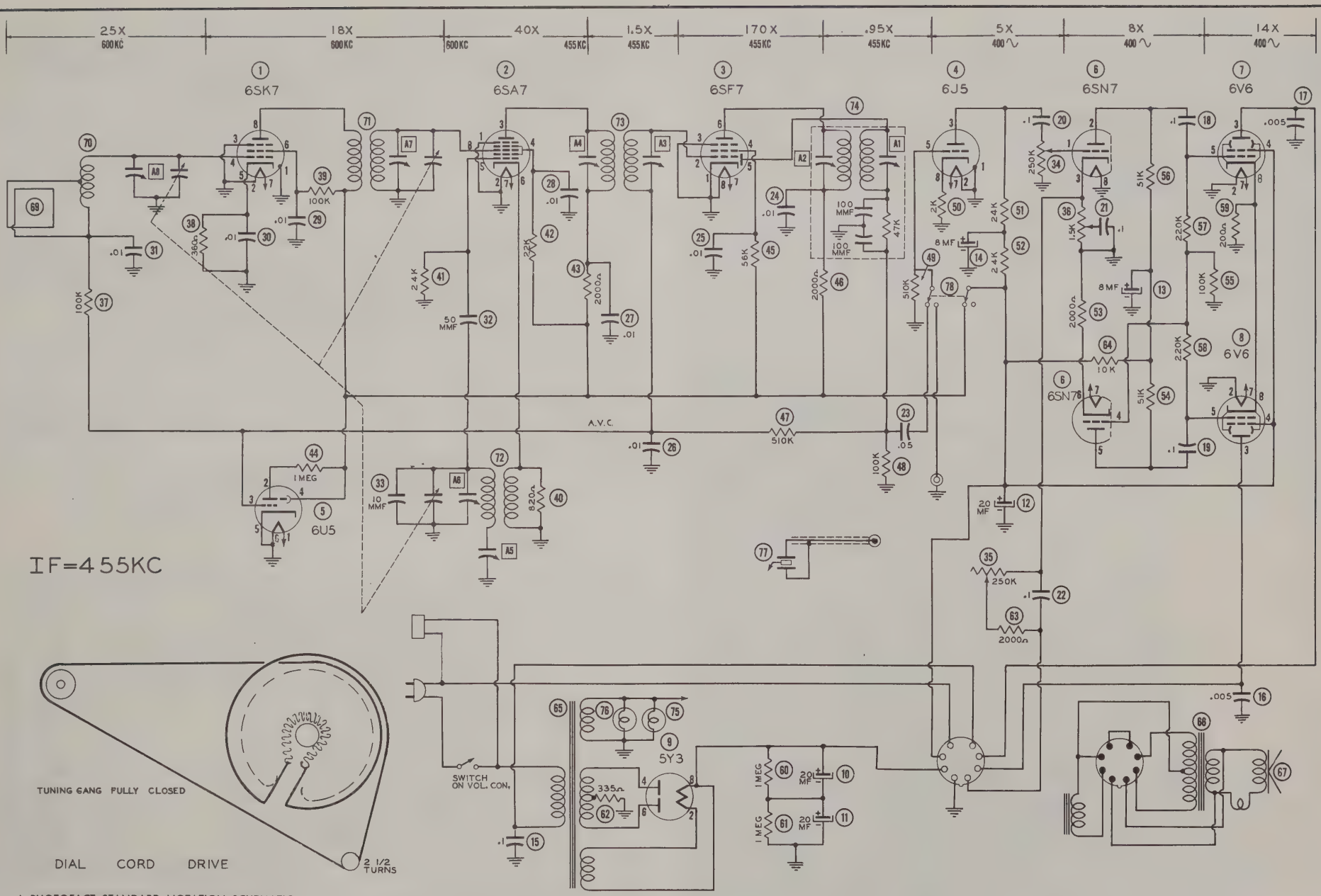
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	0Ω	700KΩ	360Ω	190KΩ	.1Ω	90KΩ
2	6SA7	0Ω	0Ω	90KΩ	110KΩ	25KΩ	2.5Ω	.1Ω	13Ω
3	6SF7	0Ω	580KΩ	0Ω	145KΩ	140KΩ	90KΩ	.1Ω	0Ω
4	6J5GT	0Ω	0Ω	135KΩ	115KΩ	540KΩ	90KΩ	.1Ω	2KΩ
6	6SN7GT	230KΩ	150KΩ	1800Ω	100KΩ	150KΩ	2KΩ	.1Ω	0Ω
7	6V6GT	0Ω	0Ω	90KΩ	90KΩ	320KΩ	100KΩ	.1Ω	200Ω
8	6V6GT	0Ω	0Ω	90KΩ	90KΩ	330KΩ	INF.	.1Ω	200Ω
9	5Y3GT	310Ω	90KΩ	INF.	370Ω	INF.	380Ω	INF.	90KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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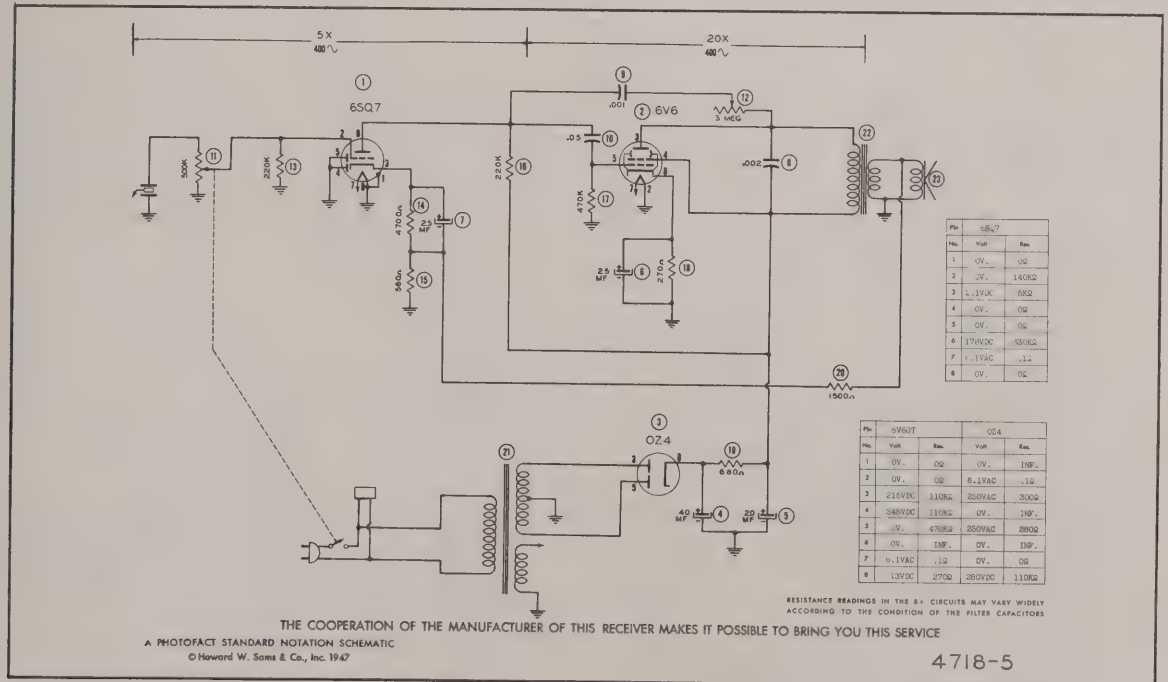
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

CAPITOL MODEL T-13

TRADE NAME	Capitol, Model T-13
SUPPLIER	Capitol Distributing Corp., Sunset & Vine, Hollywood, Calif.
TYPE SET	AC Operated 3 Tube Record Player with Speaker
TUBES (THREE)	Types, 6SQ7 AF Amp., 6V6GT Power Output, 0Z4 Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .260 Amp. @ 117V AC



Pin No.	6SQ7 Volt	6SQ7 Res.
1	0V.	0Ω
2	3V.	140KΩ
3	4.1VDC	5KΩ
4	0V.	0Ω
5	0V.	0Ω
6	174VDC	530KΩ
7	6.1VAC	.1Ω
8	0V.	0Ω

Pin No.	6V6GT Volt	6V6GT Res.	0Z4 Volt	0Z4 Res.
1	0V.	0Ω	0V.	INF.
2	0V.	0Ω	6.1VAC	.1Ω
3	216VDC	110KΩ	250VAC	300Ω
4	245VDC	110KΩ	0V.	INF.
5	0V.	470KΩ	250VAC	280Ω
6	0V.	INF.	0V.	INF.
7	6.1VAC	.1Ω	0V.	0Ω
8	13VDC	270Ω	280VDC	110KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4718-5

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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DATE 11/47 SET #28 FOLDER #4718-5

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CAPITOL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Amp.	6SQ7	6SQ7	8Q	
2	Power Output	6V6GT	6V6GT	7AC	
3	Rectifier	0Z4	0Z4	4R	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CAPITOL PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4	40	350		TC78	M-40-350	UT-40	PRS450-40	BR4045	Filter
5	20	350		TC65	M-20-350	UT-203	PRS450-20	BR2045	"
6	25	25		TC26	M-25-25	TA-25	PRS25-25	BR252A	Cathode Bypass
7	25	25		TC26	M-25-25	TA-25	PRS25-25	BR252A	" "
8	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	Output Plate Bypass
9	.001	600		TP404	S-6-001	TC-21	684-001	DT6D1	Tone Comp.
10	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	Audio Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CAPITOL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
11A	500KΩ	½		MR48	D13-133	AM-60-Z	Volume Control
B	Shaft			Not Req.	A	FS-3	Attach to 11A per instructions
C	Switch			M26	41	SW-A	" " " "
12A	3 Meg.	½		MR57	D13-140	AM-67-Z	Tone Control
B	Shaft			Not Req.	A	FS-3	Attach to 12A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CAPITOL PART No.	IRC PART No.	IDENTIFICATION CODES
13	220KΩ	½		BTS-220K	Red-Red-Yl. AF Grid
14	4700Ω	½		BTS-4700	Yl.-Vi.-Red AF Cathode
15	560Ω	½		BTS-560	Grn.-Blue-Br. AF Cathode
16	220KΩ	½		BTS-220K	Red-Red-Yl. AF Plate Load
17	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
18	270Ω	1		BW-1-270	Red-Vi.-Br. Output Cathode
19	680Ω	2		BT-2-680	Blue-Gray-Br. Filter
20	1500Ω	½		BTS-1500	Br.-Grn.-Red Feedback

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CAPITOL PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
21	117V AC @ .26A	500V CT @ .05A	6.1VAC @ 1.0A		89008	P-6119*	T22R01*	P-2950*#

*Drill new mounting holes.
#Add series resistor to reduce plate voltage.

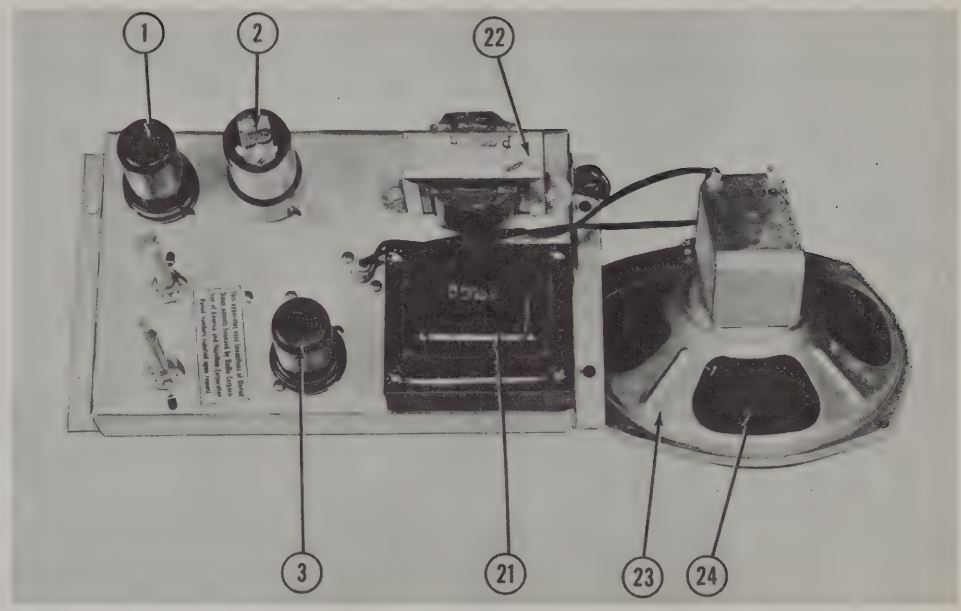
TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CAPITOL PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
22	5500Ω	3.5Ω	800Ω	.4Ω	89405	A-3877†	T22358		†Drill one new mounting hole

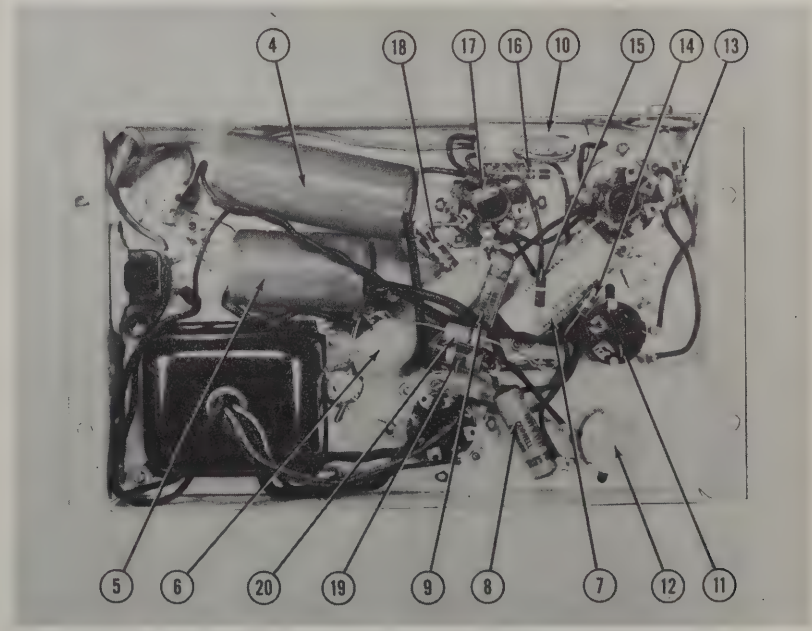
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: CAPITOL PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-112		
23	PM	3.5Ω	83300	Mod. P6-T		
	CONE DIA.	VC DIA.				
24	6"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



CHEVROLET MODEL
986146

CHEVROLET MODEL
986146

CHEVROLET MODEL 986146

TRADE NAME	Chevrolet, Model 986146
SUPPLIER	Chevrolet Motor Div., Gen. Motors Corp. Detroit 2, Mich.
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne Receiver with Pushbutton Tuning
TUBES (FIVE)	Types, 7Q7 Converter, 7A7 IF Amp., 7B6 Det.-AVC-AF, 7C5 Power Output, 0Z4 Rectifier.
POWER SUPPLY	6 Volt Storage Battery
TUNING RANGE—BROADCAST	540-1610KC RATING 6.3 Amp. @ 6.3V DC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Check calibration as shown in sketch. If incorrect hold dial shaft and turn dial to proper point. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 6 (grid) 7Q7. Low side to chassis.	260KC	Tuning slugs completely out.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
2	.1 MFD.	"	1610KC	"	"	A5	" " " "
3	75MMFD.	High side to ant. terminal. Low side to chassis.	1400KC	Tune for maximum output.	"	A6,A7	Adjust for maximum output. It is very important that exactly 75 MMFD be used for dummy ant. in order to insure proper tracking.

After receiver is installed in car tune in a weak station near 1400KC and adjust A6 for maximum volume.

PUSHBUTTON ADJUSTMENTS

1. Turn receiver on and allow it to warm up for about 15 minutes.
2. Loosen buttons about 1 turn.
3. Manually tune in desired station and push the button to be set up in completely.
4. Holding button in, tighten firmly.
5. Check accuracy of setting by detuning with manual control and retuning with pushbutton. If setting is off repeat Steps 2, 3, 4 and 5.
6. To set up the remaining buttons follow same procedure as outlined above.

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DATE 11/47 SET #28 FOLDER #4718-6

PARTS LIST AND DESCRIPTIONS

CHEVROLET
MODEL 986146

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CHEVROLET PART No.	STANDARD REPLACEMENT		
1	Converter	7Q7	7Q7	8AL	
2	IF Amp.	7A7	7A7	8V	
3	Det.-AVC-AF	7B6	7B6	8W	
4	Power Output	7C5	7C5	6AA	
5	Rectifier	0Z4	0Z4	4R	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CHEVROLET PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6A	10	350	41473	FP328	DY-310	EL-153		UP2235C	■ Filter
B	15	300							▲ "
C	20	25							Cathode Bypass
7	.004	1500		OW343	TM-16-004	TR-24	1684-004	MD16D4	Buffer
8	.5	100			SHH-2				Hash Filter
9	.5	100			SHH-2				" "
10	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Output Plate Bypass
11	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	Audio Coupling
12	.004	600		TP407	S-6-004	TC-24	684-004	DT6D4	Tone Compensation
13	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	Audio Coupling
14	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	RF Bypass Pwr. Supply
15	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	Screen Bypass
16	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
17	.007	400		TP445	S-6-006	TC-26	484-006	DT6D6	Ext. Ant. Coupling
18	50	500		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid
19	160	300							Fixed Trimmer

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CHEVROLET PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
20	500KΩ	½	1216012				Volume Control

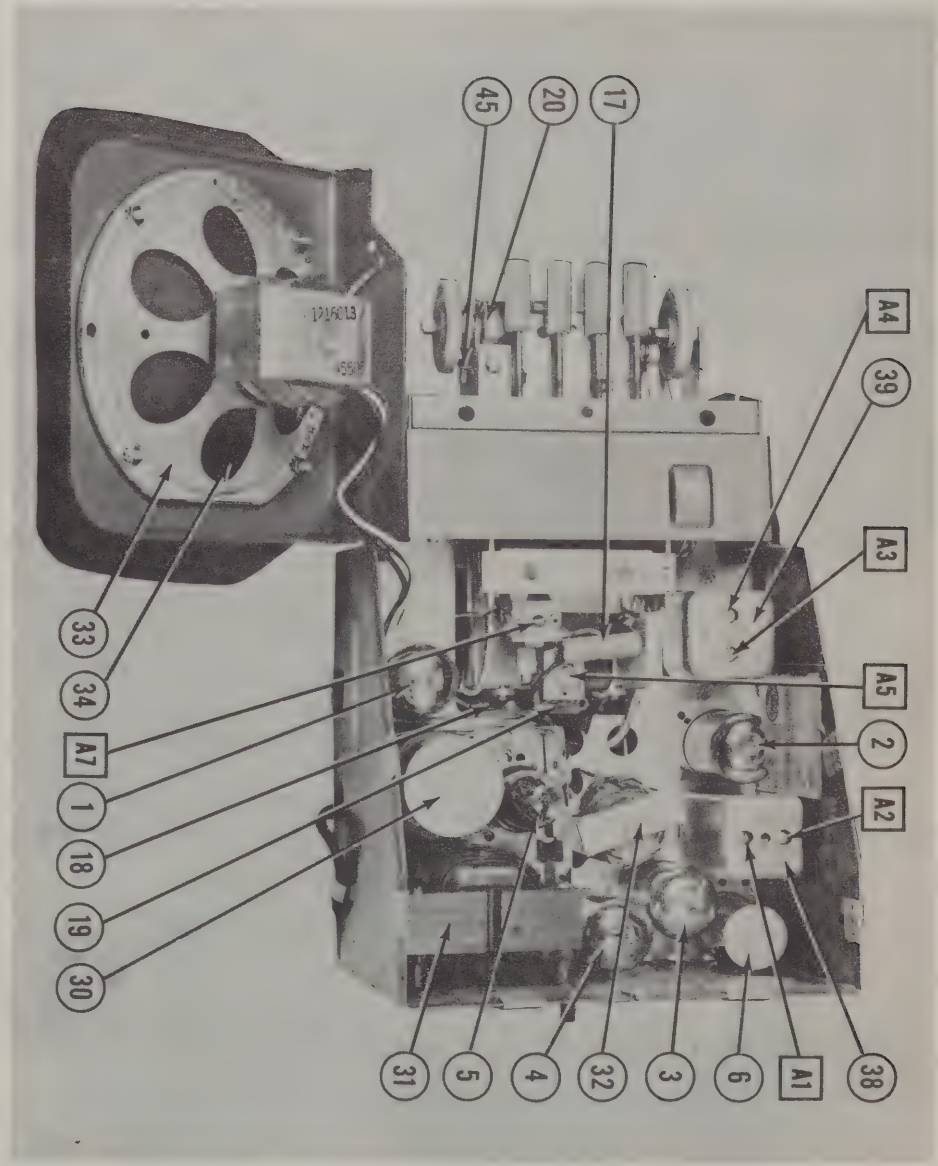
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CHEVROLET PART No.	IRC PART No.	
21	33KΩ	½		BTS-33K	Or.-Or.-Or. Oscillator Grid
22	27KΩ	1		BTA-27K	Red-Vi.-Or. Screen Dropping
23	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
24	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue AF Grid
25	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
26	150KΩ	½		BTS-150K	Br.-Grn.-Yl. Output Grid
27	270Ω	1		BW-1-270	Red-Vi.-Br. Output Cathode
28	2700Ω	1		BTA-2700	Red-Vi.-Red Filter
29	150Ω	1		BW-1-150	Br.-Grn.-Br. Hash Suppression

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				CHEVROLET PART No.	MALLORY PART No.	RADIART PART No.	
30	Interrupter	6.3	115~	1215909	859	5301	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	CHEVROLET PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
31	6.5V DC @ 2.0A	540V CT @ .046A			1216011		T22R20	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CHEVROLET PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
32	5800Ω	3.3Ω	775Ω	.7Ω	1216010	A-3877	T22S46	A-2930	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CHEVROLET PART No.	JENSEN PART No.		
	FIELD RES.	VC IMP.		ST-428		
33	4.1Ω	3.3Ω	1216013	Mod. H5-S		
	CONE DIA.	VC DIA.				
34	4-5/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	CHEVROLET PART No.	MEISSNER PART No.	
35	Preselector Coil		13Ω			Items 35, 36 & 37 are slug tuned and ganged together and are part of tuning assembly.
36	Det. Coil		13Ω			
37	Osc. Coil	.2Ω	5.5Ω			
38	Input IF	57Ω	57Ω	1216014		
39	Output IF	55Ω		1216015		
40	"A" RF Choke		0Ω			
41	B+ RF Choke		0Ω			
42	V1b. RF Chk.		0Ω			

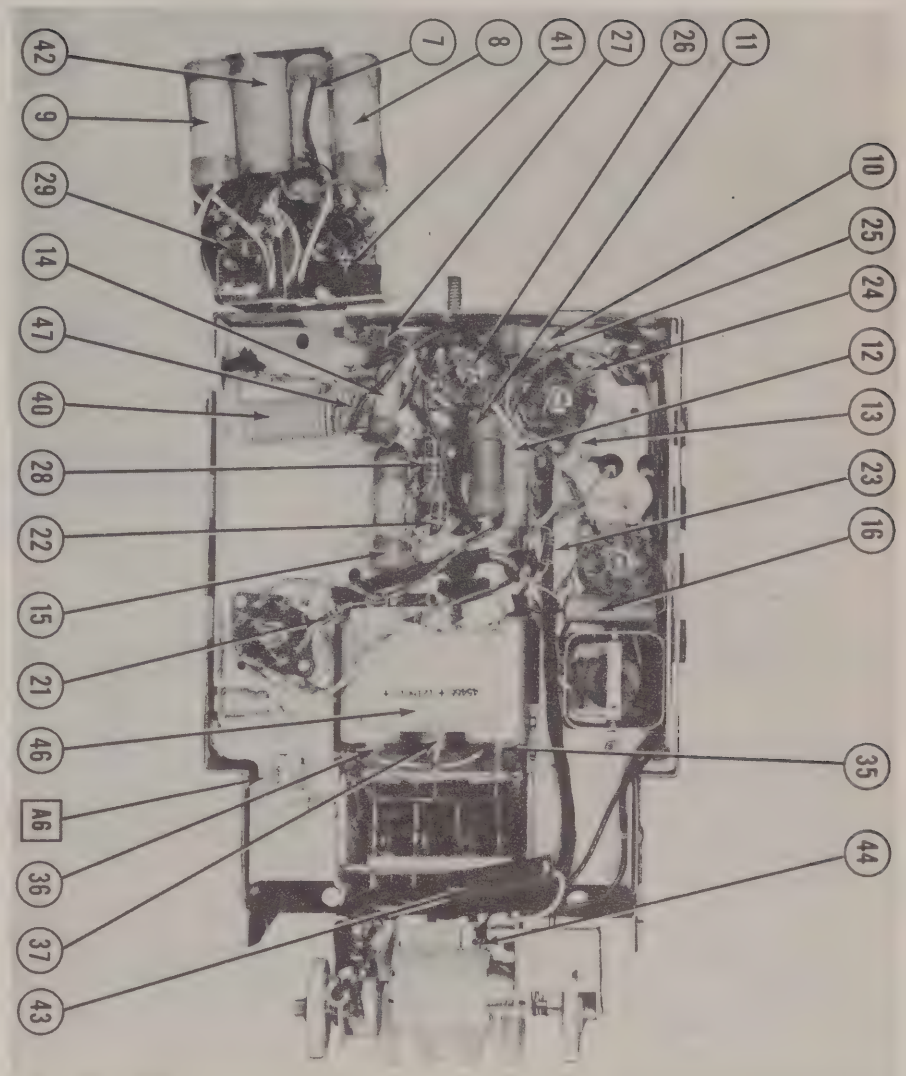
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					CHEVROLET PART No.		
43	Bayonet	6-8	.2	White			Type 51

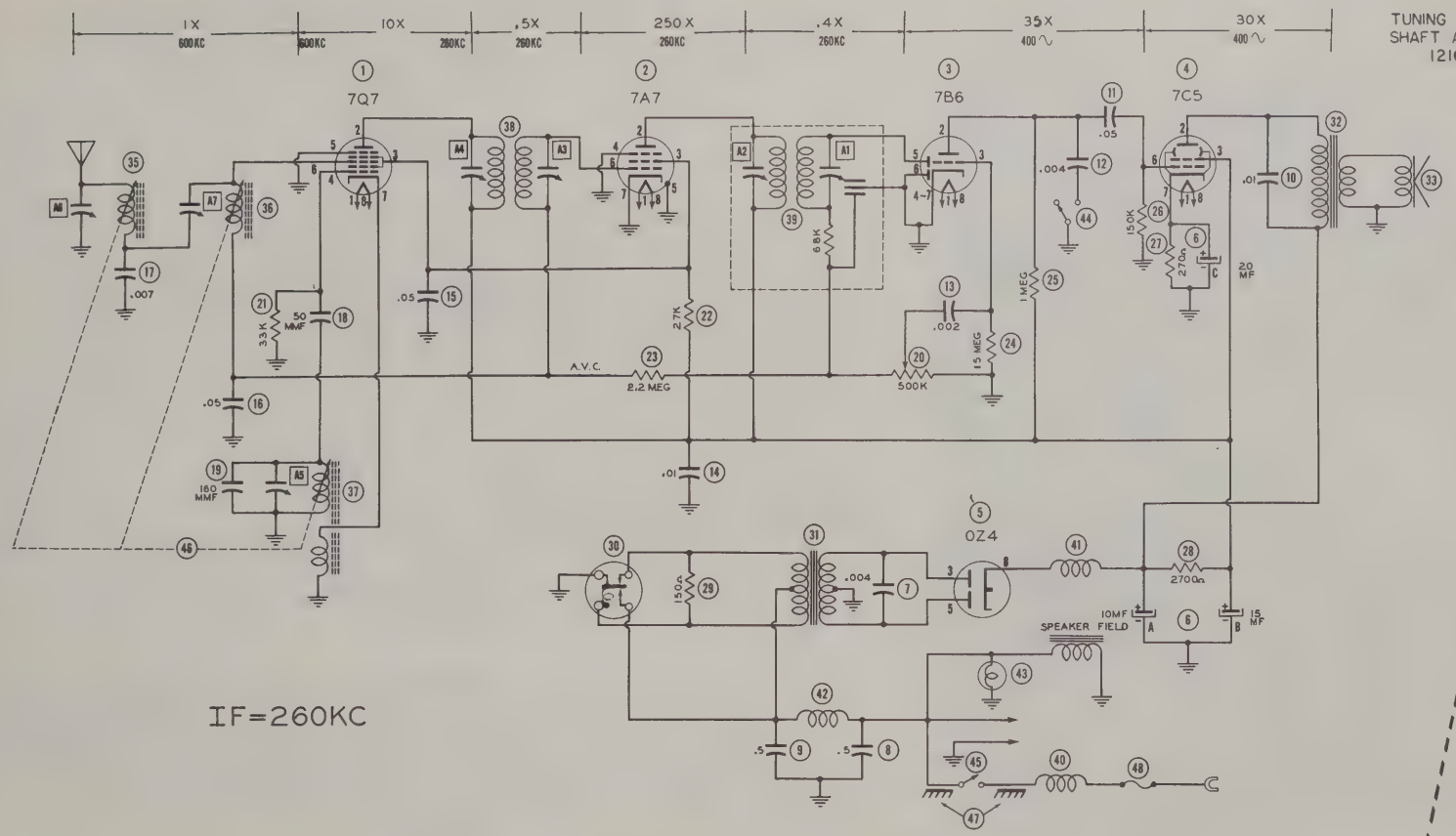
MISCELLANEOUS

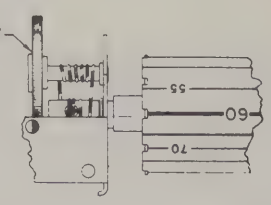
ITEM No.	PART NAME	CHEVROLET PART No.	NOTES
44	Switch		Tone
45	■		On-Off
46	Tuning Assby.		
47	Spark Plate		
48	Fuse		9 Amp.

CHASSIS—BOTTOM VIEW

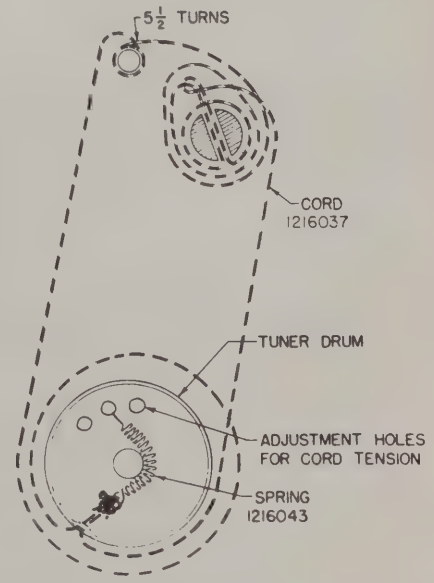


CHEVROLET MODEL 986146





TO RECALIBRATE AFTER REPLACING DRIVE STRING, TURN COIL CORES FULLY IN, THEN HOLD DIAL SHAFT STATIONARY WITH PLIERS, AND REVOLVE DIAL WITH FINGERS UNTIL THE 60 CALIBRATION LINE IS IN RELATION SHOWN TO BRACKET.



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7Q7	6.3VDC	208VDC	60VDC	-5.5VDC§	0V.	-.5VDC	0V.	0V.
2	7A7	6.3VDC	208VDC	60VDC	0V.	0V.	-.5VDC	0V.	0V.
3	7B6	0V.	75VDC	-.8VDC	0V.	-.6VDC	0V.	0V.	6.3VDC
4	7C5	0V.	218VDC	208VDC	0V.	75VDC	0V.	11VDC	6.3VDC
5	0Z4	0V.	0V.	230VAC	0V.	230VAC	6.3VDC	0V.	245VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7Q7	.5Ω	100KΩ	130KΩ	35KΩ	0Ω	2.7 Meg.	.3Ω	0Ω
2	7A7	.5Ω	100KΩ	130KΩ	0Ω	0Ω	2.7 Meg.	0Ω	0Ω
3	7B6	0Ω	1.1 Meg.	15 Meg.	0Ω	500KΩ	0Ω	0Ω	.5Ω
4	7C5	0Ω	100KΩ	100KΩ	INF.	1.1 Meg.	180KΩ	270Ω	.5Ω
5	0Z4	INF.	INF.	350Ω	INF.	330Ω	.5Ω	INF.	100KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4718-6

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by connecting negative (-) 3 volts to the AVC line.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

CORONADO MODELS
43-8353, 43-8354

CORONADO MODELS
43-8353, 43-8354

CORONADO MODEL 43-8354

TRADE NAME	Coronado, Models 43-8353, 43-8354
MANUFACTURER	"Coronado" Minneapolis, Minn. & Los Angeles, Calif.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types, 12SK7GT RF Amp., 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	530-1650KC RATING .220 Amp. @ 117V AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1 MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to left stator of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	.1 MFD.	"	1650KC	"	"	A5	Adjust for maximum output.
3	200MMFD	High side to ext. ant. clip. Low side to chassis.	1400KC	Tune for maximum output.	"	A6	" " " "

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DATE 11/47 SET #28 FOLDER #4718-7

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7GT	12SK7GT	8N	
2	Converter	12SA7GT	12SA7GT	8AD	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	A-8C-10077	FP357	DY-403020-150	EL-224	AF844D	UP42215	■ Filter
B	20	150							● "
C	20	150							▲ "
8	.05	400	C-8D-10813	TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
9	.18	400	C-8D-11111	TP417	S-4-2		484-.15	DT4P2	Line Isolation
10	.02	400	C-8D-10774	TP423	S-4-02	TC-12	484-02	DT4S2	Output Plate Bypass
11	.01	400	C-8D-10761	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
12	.002	600	C-8D-10778	TP405	S-6-002	TC-22	684-002	DT6D2	" "
13	.05	200	C-8D-10770	TP426	S-4-05	TC-15	484-05	DT4S5	IF Cathode Bypass
14	.05	200	C-8D-10770	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
15	.25	200	C-8D-10775	TP430	S-4-25	TC-2	434-.25	DT4P25	RF Bypass Pwr. Supply
16	.002	600	C-8D-10778	TP405	S-6-002	TC-22	684-002	DT6D2	Ext. Ant. Coupling
17	330	500	C-8F3-119	MC241	MO.5-33	1FM-33	1468-0003	5W5T3	AF Plate Bypass
18	100	500	C-8F3-113	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Diode RF Filter
19	100	500	C-8F3-113	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	" " "
20	100	500	C-8F3-113	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	RF Coupling
21	100	500	C-8F3-113	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid Cap.
22	100	500	C-8F3-113	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	RF Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23	1 Meg.	½	A-10A-11146				Volume Control & Sw.

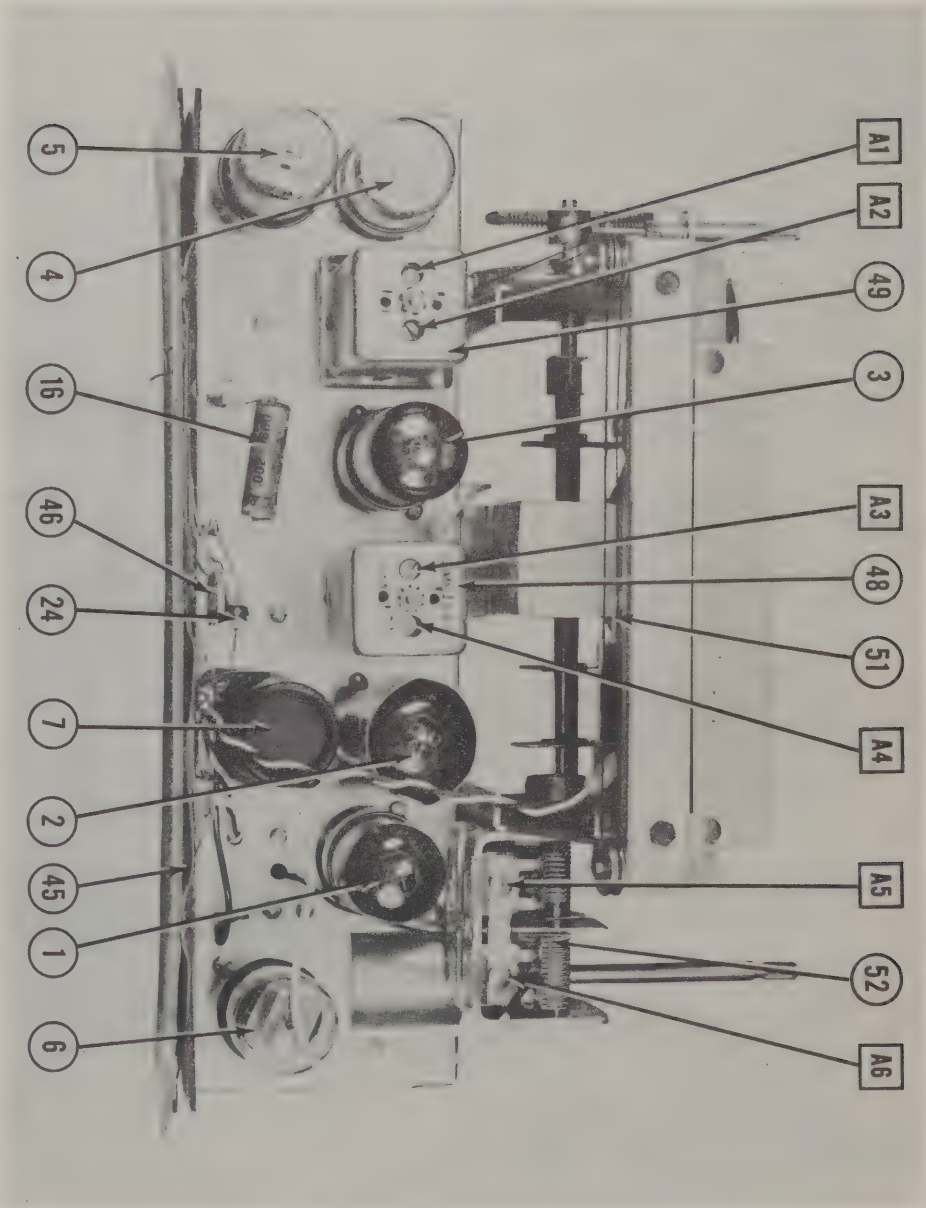
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
24	3900Ω	½	C-9B1-69	BTS-3900	Or.-White-Red Antenna Loading
25	1 Meg.	½	C-9B1-31	BTS-1 Meg.	Br.-Blk.-Grn. RF Grid
26	100Ω	½	C-9B1-50	BW-½-100	Br.-Blk.-Br. RF Cathode
27	5600Ω	½	C-9B1-71	BTS-5600	Grn.-Blue-Red RF Plate Load
28	150KΩ	½	C-9B1-26	BTS-150K	Br.-Grn.-Yl. Converter Grid
29	47KΩ	½	C-9B1-23	BTS-47K	Yl.-Vi.-Or. Oscillator Grid
30	390Ω	½	C-9B1-57	BW-½-390	Or.-White-Br. IF Cathode
31	3.3 Meg.	½	C-9B1-34	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
32	47KΩ	½	C-9B1-23	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
33	6.8 Meg.	½	C-9B1-36	BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
34	220KΩ	½	C-9B1-27	BTS-220K	Red-Red-Yl. AF Plate Load
35	560KΩ	½	C-9B1-95	BTS-560K	Grn.-Blue-Yl. Output Grid
36	150Ω	½	C-9B1-52	BW-½-150	Br.-Grn.-Br. Output Cathode
37	1200Ω	1	C-9B2-63	BTA-1200	Br.-Red-Red Filter
38	220Ω	1	C-9B2-54	BW-1-220	Red-Red-Br. "
39	27Ω	½	C-9B1-43	BW-½-27	Red-Vi.-Blk. Rectifier Ballast
40	33Ω	1	C-9B2-44	BW-1-33	Or.-Or.-Blk. Line Dropping
41	150KΩ	½	C-9B1-26	BTS-150K	Br.-Grn.-Yl. Line Isolation

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CORONADO PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
42	2650Ω	3.9Ω	270Ω	.5Ω	B-12C-11203	A-3876*	T22S45*	A-2928*	*Drill new mounting holes.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: CORONADO PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.				
43	PM	3.6Ω	B-18A-11137			
	CONE DIA.	VC DIA.				
44	4"x6"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

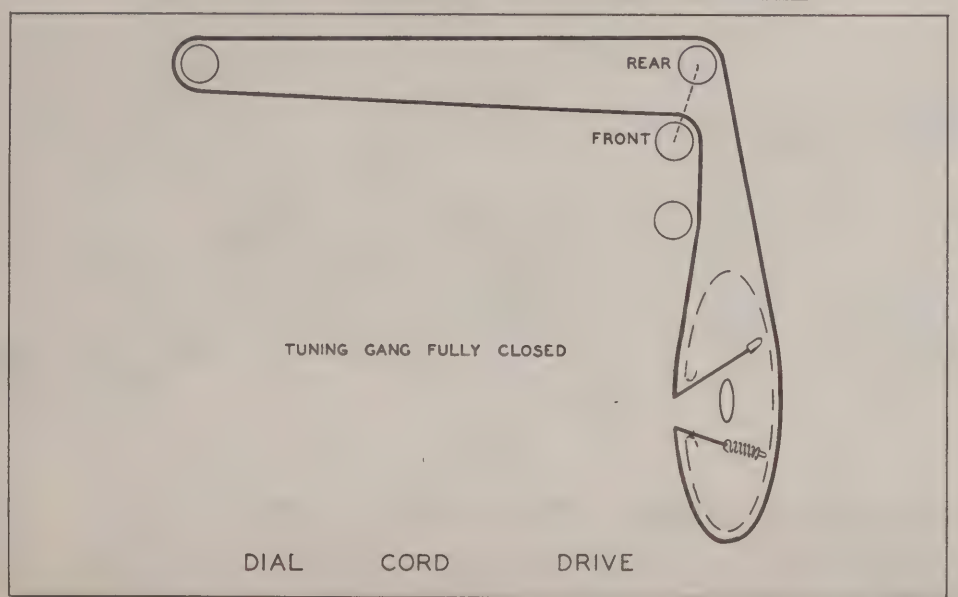
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CORONADO PART No.	MEISSNER PART No.	
45	Loop Ant.	.1Ω	1.2Ω	C-212-11176-1§		§Loop ant. Part. No. for Ivory Cabinet is C-212-11176-1. §Loop ant. Part. No. for Walnut Cabinet is C-212-11176.
46	Ant. Load. Coil		15Ω	A-16A-11177		
47	Osc. Coil	1.2Ω	8Ω	A-13D-11160	14-1040	
48	Input IF	38Ω	38Ω	B-13A-11133	16-6658	
49	Output IF	25Ω	28Ω	B-13B-11132	16-6660	
50	RF Choke		0Ω			

DIAL LIGHT

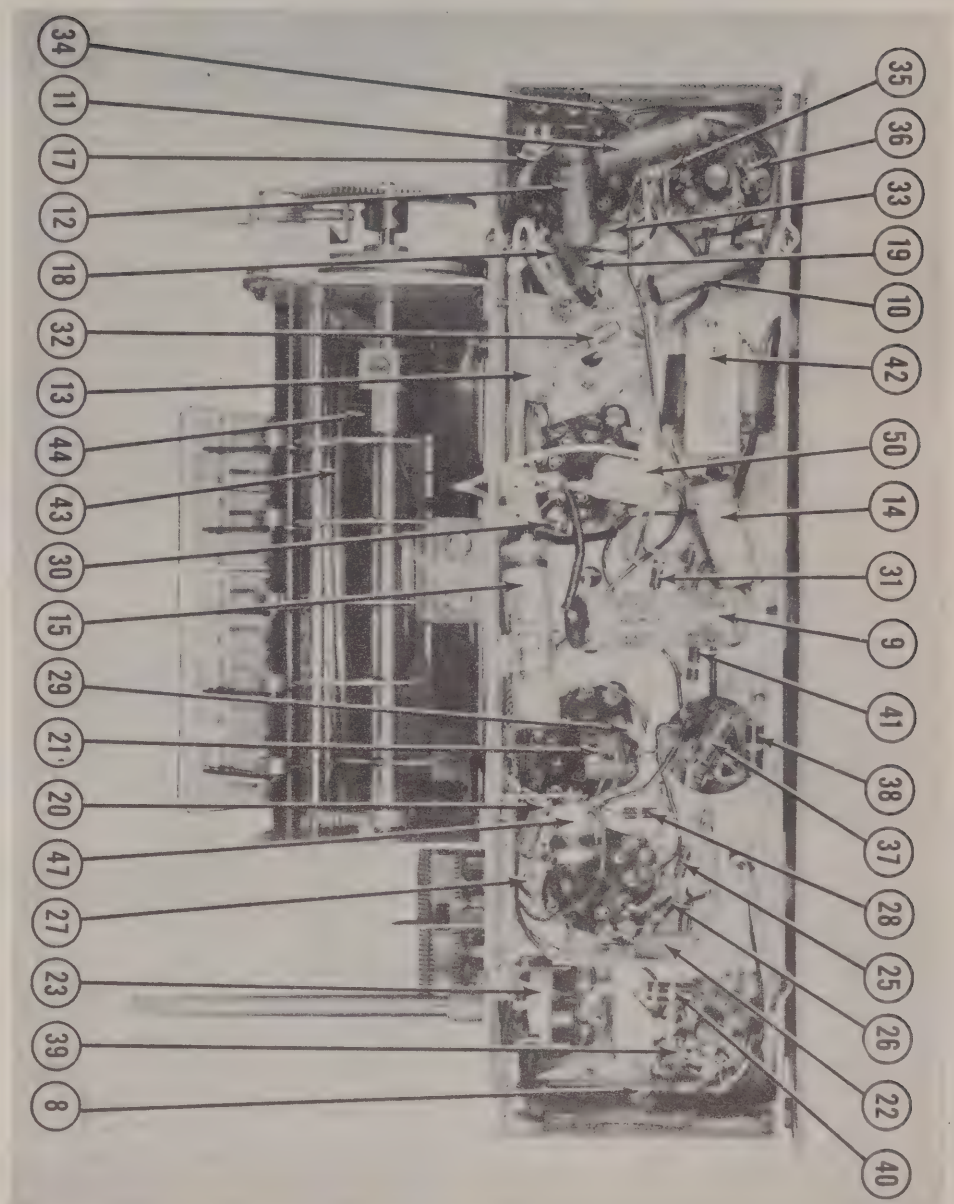
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: CORONADO PART No.		INSTALLATION NOTES
51	Bayonet	6-8	0.15	Brown	A-46A-10783		Type 47

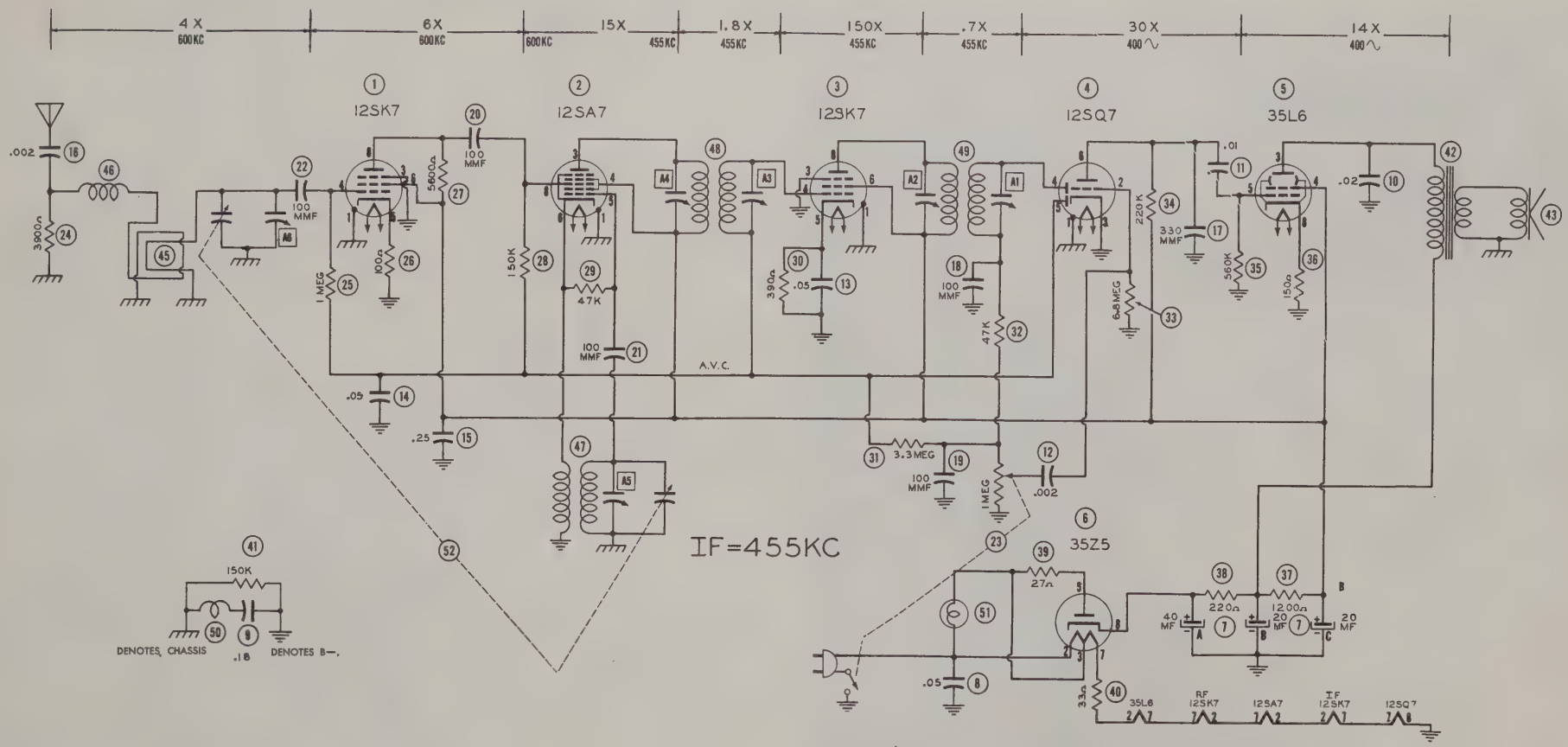
MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
52	2 Gang Var. Cap.	B-8A-11136	29-500 MMF, 32-198 MMF
	Dial Scale	C-6D-11140	
	Cabinet	5C-10042-9	Bakelite-Ivory
	"	5C-10042-36	" -Walnut



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0V.	36VAC	0V.	-.1VDC	.7VDC	78VDC	48VAC	45VDC
2	12SA7GT	0V.	24VAC	78VDC	78VDC	-17VDC§	0V.	36VAC	-.3VDC
3	12SK7GT	0V.	24VAC	0V.	-.6VDC	2.2VDC	78VDC	12VAC	78VDC
4	12SQ7GT	0V.	-.7VDC	0V.	-.5VDC	-.6VDC	53VDC	12VAC	0V.
5	35L6GT	0V.	80VAC	98VDC	78VDC	0V.	0V.	48VAC	4.7VDC
6	35Z5GT	0V.	117VAC	113VAC	0V.	112VAC	70VAC	85VAC	117VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	160KΩ	38Ω	0Ω	6 Meg.	100Ω	150KΩ	48Ω	155KΩ
2	12SA7GT	160KΩ	25Ω	150KΩ	150KΩ	50KΩ	1Ω	38Ω	5 Meg.
3	12SK7GT	160KΩ	25Ω	0Ω	5 Meg.	400Ω	150KΩ	12Ω	150KΩ
4	12SQ7GT	160KΩ	7 Meg.	0Ω	1 Meg.	5 Meg.	370KΩ	12Ω	0Ω
5	35L6GT	INF.	83Ω	150KΩ	150KΩ	600KΩ	0Ω	48Ω	150Ω
6	35Z5GT	INF.	140Ω	135Ω	INF.	170Ω	83Ω	115Ω	150KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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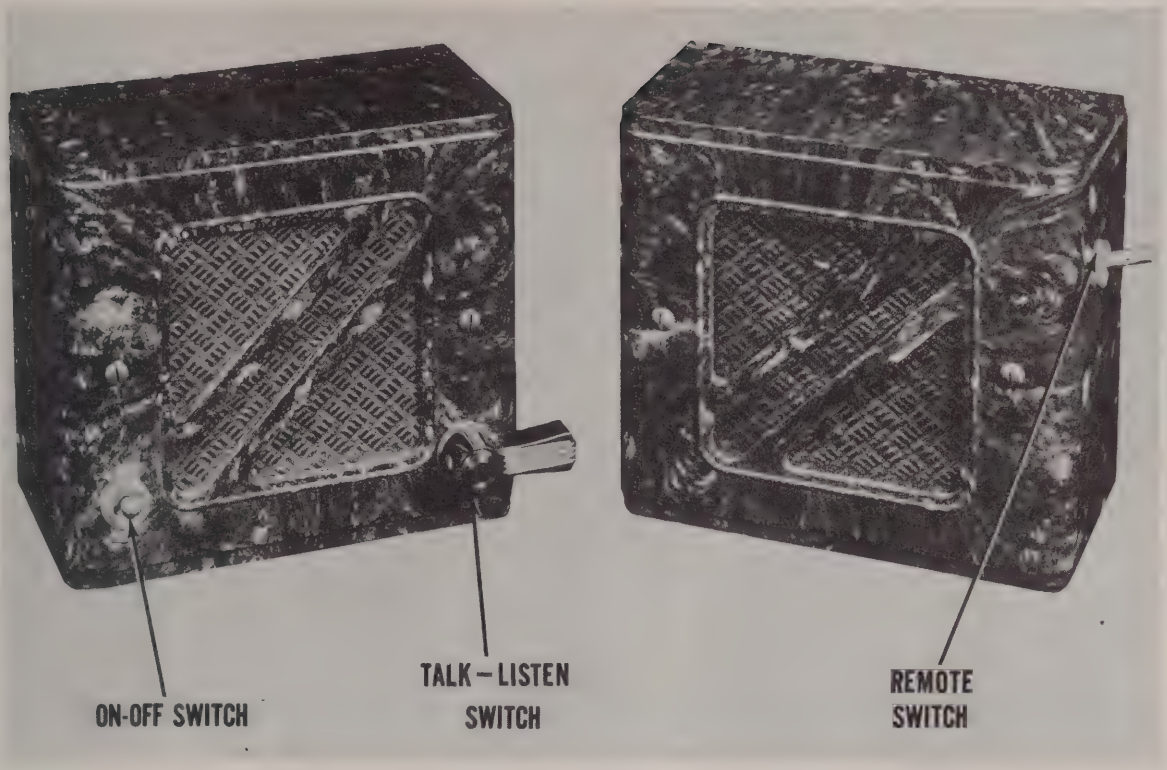
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

4718-7

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

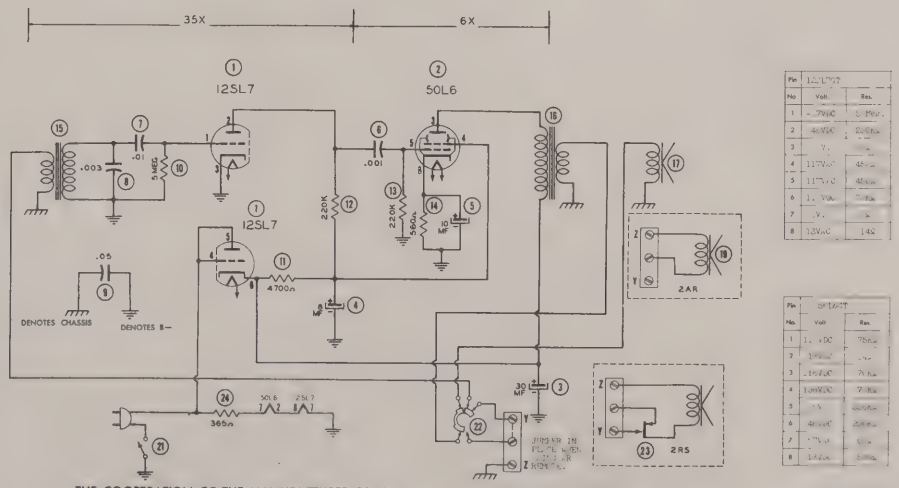


DAVID BOGEN MODELS
2AR, 2RS

DAVID BOGEN MODELS
2AR, 2RS

DAVID BOGEN MODEL 2RS

TRADE NAME	David Bogen, Models 2AR, 2RS
MANUFACTURER	David Bogen, Inc., 663 Broadway, New York, N.Y.
TYPE SET	AC-DC Operated Inter-Communication System
TUBES (TWO)	Types, 12SL7GT Audio Amp. & Rectifier, 50L6GT Power Output.
POWER SUPPLY	110-120 Volts AC-DC RATING .180 Amp. @ 117 Volts AC



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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

4718-8

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Audio Amp. & Rect.	12SL7GT	12SL7GT	8BD	
2	Power Output	50L6GT	50L6GT	7AC	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DAVID BOGEN PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
3	30	150		TC47	DY-40-150	EL-31	AF6D	UP1AJ24	Filter
4	8	150		TC42	M-8-150	UT-81	PRSA150-8	BR815	"
5	10	25		TC22	M-10-25	TA-10	PRSA25-10	BR102A	Cathode Bypass
6	.001	600		TP404	S-6-001	TC-21	684-001	DT6D1	Audio Coupling
7	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	"
8	.003	600		TP406	S-6-003	TC-23	684-003	DT6D3	Transformer Shunt
9	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Line Isolation

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
10	5 Meg.	1/2		BTS-4.7 Meg.	Grn.-Blk.-Grn. AF Grid
11	4700Ω	1/2		BTS-4700	Yl.-Vi.-Red Filter
12	220KΩ	1/2		BTS-220K	Red-Red-Yl. AF Plate Load
13	220KΩ	1/2		BTS-220K	Red-Red-Yl. Output Grid
14	560Ω	1/2		BTS-560	Grn.-Blue-Br. Output Cathode

TRANSFORMER (INPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
15	3.4Ω	16000Ω	.9Ω	1300Ω	T110B		T22S48*	A-4744	*Reverse Pri.&Sec. Windings

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DAVID B. PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
16	1400Ω	3.4Ω	90Ω	.5Ω	T252B	A-3849	T22S45#	A-2934	#Drill one new mounting hole.

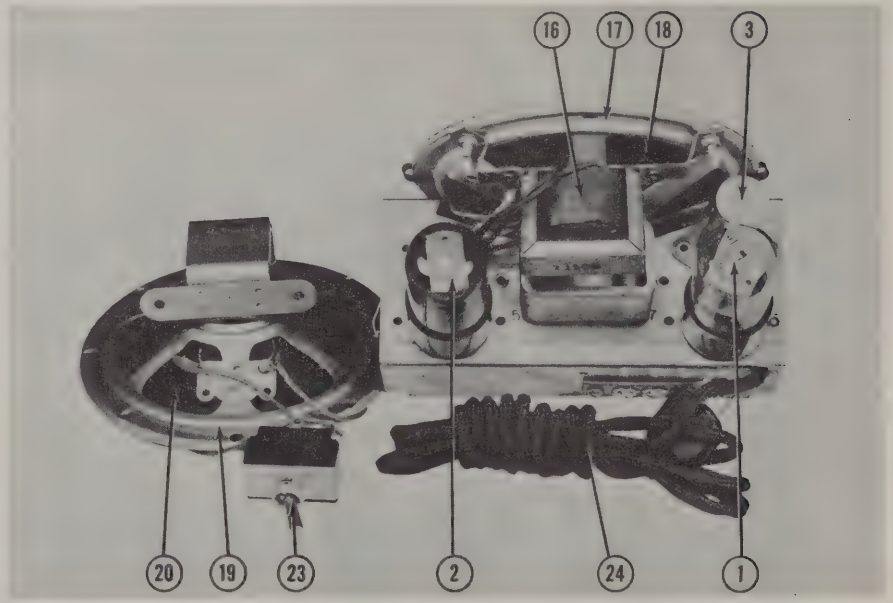
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-105		
17	PM	3.2Ω		Mod. P5-X		
	CONE DIA.	VC DIA.				
18	4-3/4"	1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		
	FIELD	VC IMP.		ST-105		
19	PM	3.4Ω		Mod. P5-X		
	CONE DIA.	VC DIA.				
20	4-3/4"	1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		

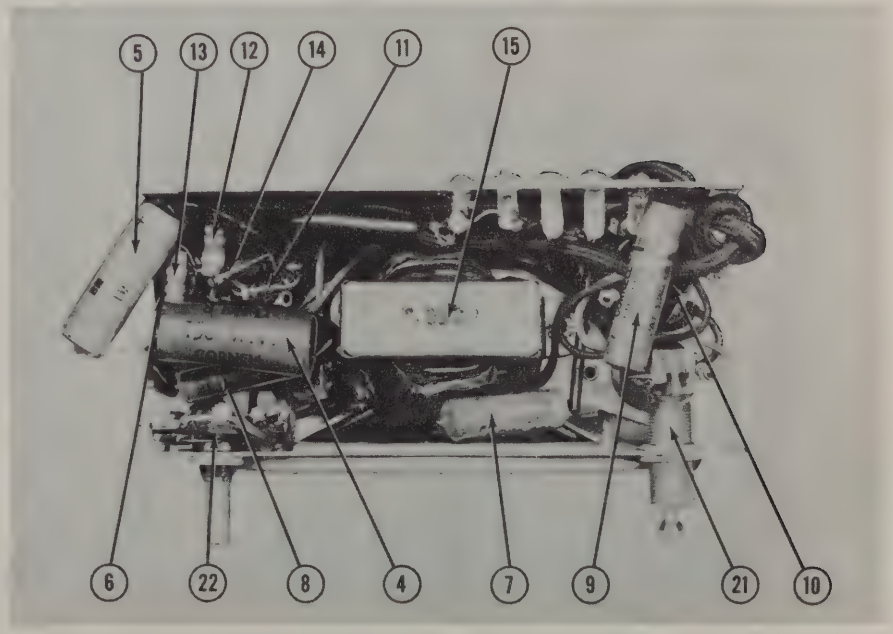
MISCELLANEOUS

ITEM No.	PART NAME	DAVID BOGEN PART No.	NOTES
21	Switch		Power On-Off
22	"		Talk-Listen
23	"		Remote
24	Line Cord		365Ω

CHASSIS—TOP VIEW



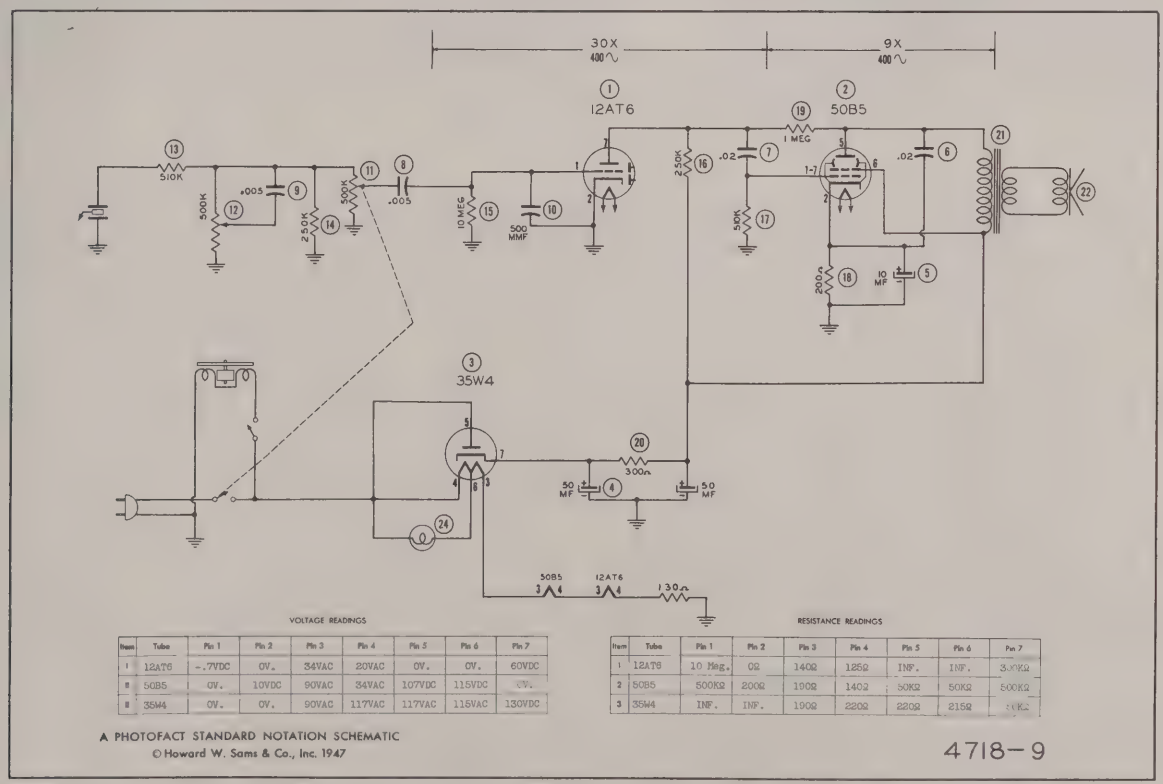
CHASSIS—BOTTOM VIEW



DYNAVOX MODEL
AP-514 (Ch. AT)

DYNAVOX AP-514

TRADE NAME	Dynavox, Model AP-514 (Ch. AT)
MANUFACTURER	Dynavox Corp., 40-35 21st St., Long Island City., N.Y.
TYPE SET	AC Operated Phonograph with 3 Tube Amplifier & Speaker
TUBES (THREE)	Types, 12AT6 AF Amp., 50B5 Power Output, 35W4 Rectifier, or Octal Equivalents
POWER SUPPLY	110-120 Volts AC RATING .250 Amp. @ 117 Volts AC



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12AT6	-.7VDC	0V.	34VAC	20VAC	0V.	0V.	60VDC
2	50B5	0V.	10VDC	90VAC	34VAC	107VDC	115VDC	0V.
3	35W4	0V.	0V.	90VAC	117VAC	117VAC	115VAC	130VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12AT6	10 Meg.	0Ω	140Ω	125Ω	INF.	INF.	300KΩ
2	50B5	500KΩ	200Ω	190Ω	140Ω	50KΩ	50KΩ	500KΩ
3	35W4	INF.	INF.	190Ω	220Ω	220Ω	215Ω	[illegible]

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4718-9

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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DATE 11/47 SET #28 FOLDER #4718-9

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: DYNAVOX PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1A	AF Amp.	12AT6	12AT6	7BT	
B	" "	12SQ7	12SQ7	8Q	
2A	Power Output	50B5	50B5	7BZ	
B	" "	50L6GT	50L6GT	7AC	
3A	Rectifier	35W4	35W4	5BQ	
B	"	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DYNAVOX PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4A	50	150		2N521	DSB-2x50-150	TA-505	PRSA150-50-50	EZ5515	Filter - Red
B	50								" - Orange
5	10	50		TC32	M-10-50	TA-510	PRS50-10	BR105	Cathode Bypass
6	.02	600		TP412	S-6-02	TC-12	684-02	DT6S2	Output Plate Bypass
7	.02	600		TP412	S-6-02	TC-12	684-02	DT6S2	Audio Coupling
8	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	" "
9	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	Tone Comp.
10	500	500		MC245	MO.5-35	1FM-35	1468-0005	5W5T5	AF Grid Bypass

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DYNAVOX PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
11A	500KΩ	½		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 11A per instructions
C	Switch			M26	41	SW-A	" " " " "
12A	500KΩ	½		MR50	D13-133	M-58-S	Tone Control
B	Shaft			Not Req.	A	Not Req.	Attach to 12A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DYNAVOX PART No.	IRC PART No.	IDENTIFICATION CODES
13	510KΩ	½		BTS-470K	Grn.-Br.-Yl. Series Phono
14	250KΩ	½		BTS-270K	Red-Grn.-Yl. Phono Shunt
15	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue AF Grid
16	250KΩ	½		BTS-270K	Red-Grn.-Yl. AF Plate Load
17	510KΩ	½		BTS-470K	Grn.-Br.-Yl. Output Grid
18	200Ω	1		BW-1-220	Red-Blk.-Br. Output Cathode
19	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Feedback
20	300Ω	1		BW-1-330	Or.-Blk.-Br. Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DYNAVOX PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
21	2000Ω	3.7Ω	180Ω	.7Ω		A-3876	T22845	A-2928	

SPEAKER

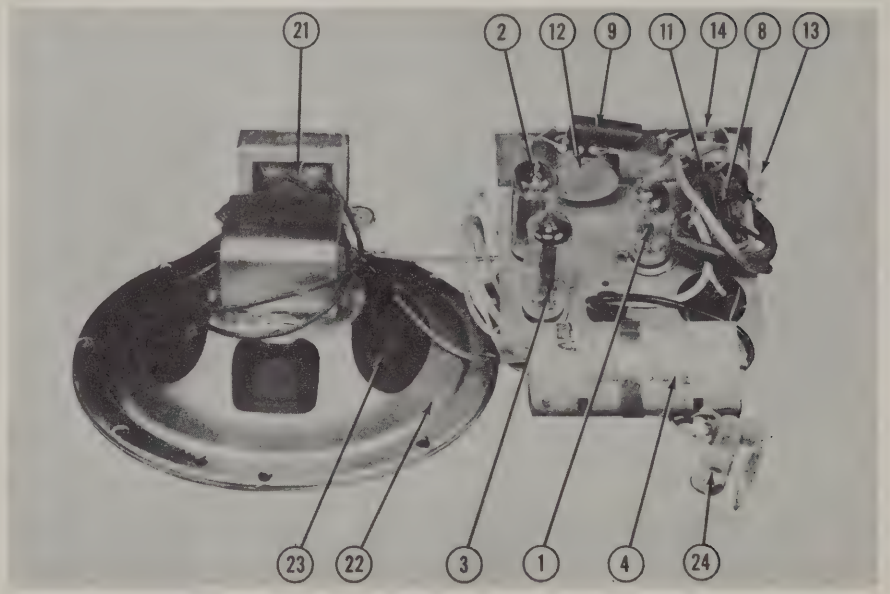
ITEM No.	RATINGS		REPLACEMENT DATA: DYNAVOX PART No.	JENSEN PART No.		INSTALLATION NOTES
22	FIELD	VC IMP.		ST-108		
	PM	3.7Ω		Mod. P6-X		
23	CONE DIA.	VC DIA.	CONE HAS SPECIAL ADJUSTMENT FEATURE-ORDER FROM MANUFACTURER			
	6-1/4"	½"				

DIAL LIGHT

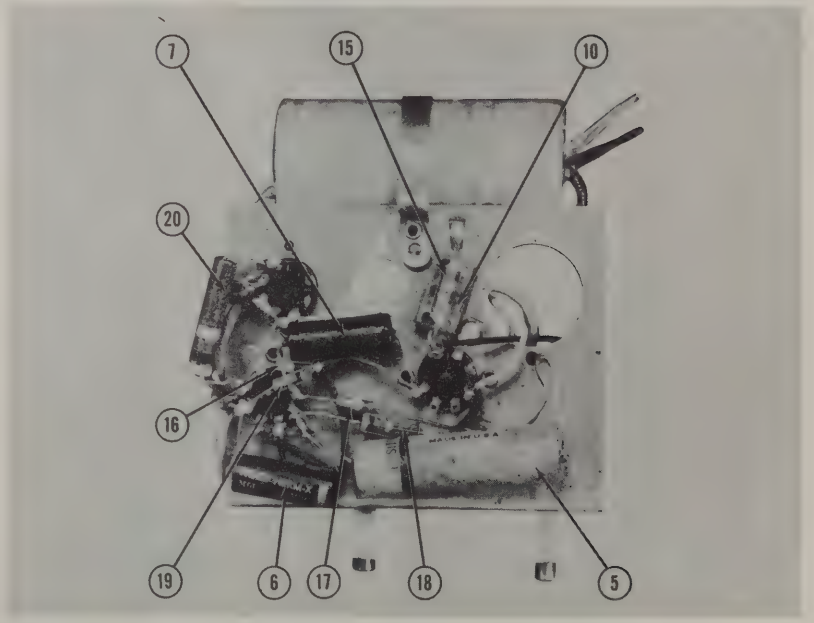
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: DYNAVOX PART No.		INSTALLATION NOTES
24	Bayonet	7.5	0.2	White			Type 51

DATE 11/47 SET #28 FOLDER #4718-9

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



FADA MODELS
711, 740

FADA MODELS
711, 740

FADA MODEL 740

TRADE NAME	Fada, Models 711, 740
MANUFACTURER	Fada Radio & Electric Co., Inc., 525 Main St., Belleville, N.J.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	528-1680KC
RATING	.230 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with base of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side front stator of tuning cap. Low side to chassis.	456KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2		Loop	1680KC	"	"	A5	Fashion Loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		"	1500KC	Tune for maximum output.	"	A6	Adjust for maximum output.
4		"	600KC	"	"		Check tracking. If tracking is off bend rotor plates of ant. section of tuning cap. IF this is necessary repeat Steps 2, 3 and 4.

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DATE 11/47 SET #28 FOLDER #4718-10

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: FADA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7BK	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	FADA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	30	150	22.16		DSB-403020-150	TA-430	PRSA150-40-30	EZ42215	Filter - Red§
B	40	150							" - Blue
C	20	150				UT-201	PRS150-20		" - Yellow
6A	30	150	22.1	FP357	DY-403020-150	EL-340	AF844D	UP43215	▲ " †
B	40	150							■ " "
C	20	150							" "
7	.05	400	12.12	TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
8	.03	400	12.9	TP424	S-6-03	TC-13	484-03	DT4S3	Output Plate Bypass
9	.01	400	12.6	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.005	600	12.4	TP408	S-6-005	TC-25	684-005	DT6D5	" "
11	.05	200	12.11	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	220		17.8	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	AF Plate Bypass
13	220		17.8	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Diode Filter
14	100		17.5	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid
15	10			MC215	MO.5-41	1FM-41	1468-00001	5W5Q1	Fixed Trimmer‡

§Used in Model 740 - Part #22.21 Alternate.
†Used in Model 711.
‡Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	FADA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
16A	500KΩ	½	52.15	MK401	D13-133	AM-60-Z	Volume Control -Used in Model 740
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 16A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
16A	500KΩ	½	52.16	MR48	D13-133	M-60-Z	Volume Control-Used in Model 711
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch		" "	" "	41	SW-A	" " " " "

RESISTORS

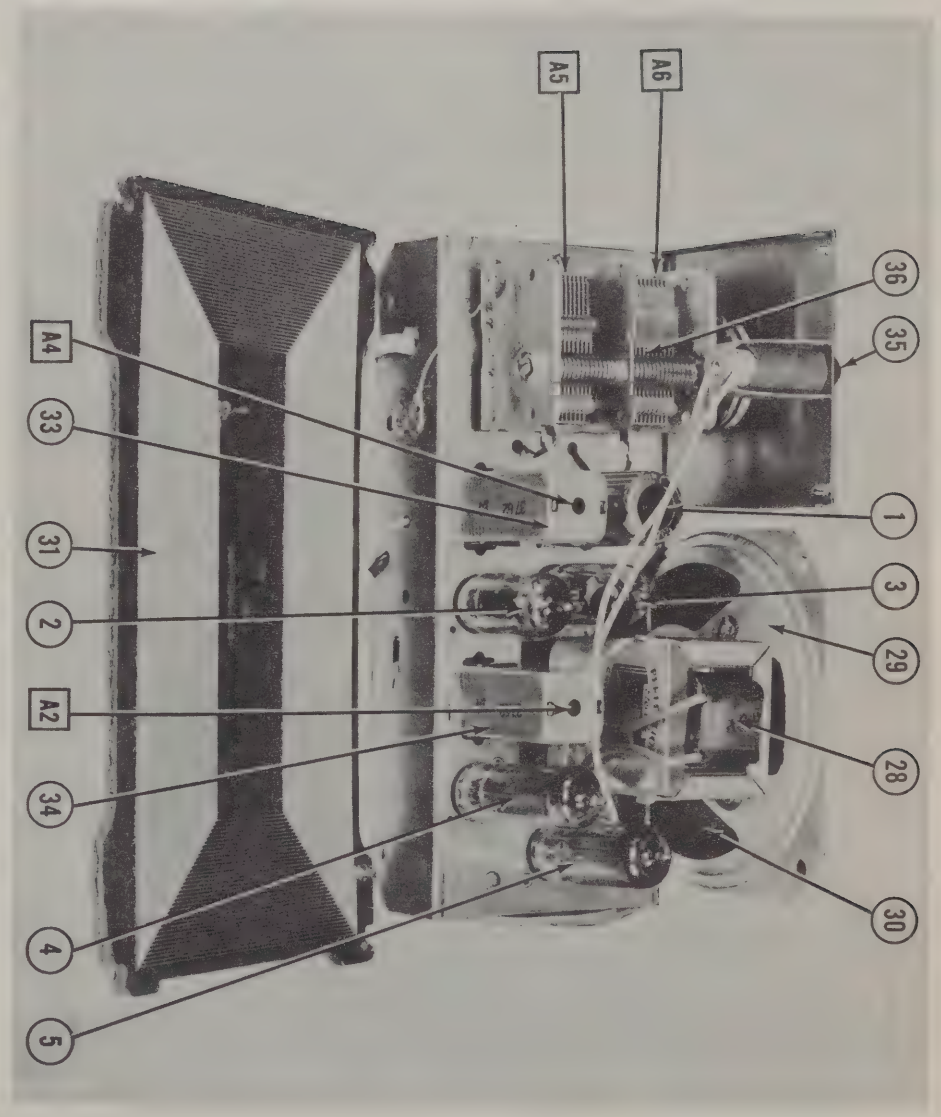
ITEM No.	RATING: RESISTANCE	RATING: WATTS	FADA PART No.	IRC PART No.	IDENTIFICATION CODES
17	22KΩ	½	32.13	BTS-22K	Red-Red-Or. Oscillator Grid
18	100Ω	½	32.2	BW-½-100	Br.-Blk.-Br. IF Cathode - See Note
19	1 Meg.	½	32.23	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
20	3.9 Meg.	½	32.26	BTS-3.9 Meg.	Or.-White-Grn. AF Grid
21	220KΩ	½	32.18	BTS-220K	Red-Red-Yl. AF Plate Load
22	470KΩ	½	32.20	BTS-470K	Yl.-Vi.-Yl. Output Grid
23	130Ω	½	32.3	BW-½-120	Br.-Or.-Br. Output Cathode
24	1200Ω	1	32.29	BTA-1200	Br.-Red-Red Filter
25	200Ω	1	32.27	BW-1-220	Red-Blk.-Br. "
26	27Ω	½	32.49	BW-½-27	Red-Vi.-Blk. Surge Limiter
27	30Ω	1	117.1	BW-1-33	Or.-Blk.-Blk. Line Dropping

Note-Some models use 33Ω in this application. Part #32.43 - IRC replacement BW-½-33.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	FADA PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
28	2000Ω	3.1Ω	190Ω	.7Ω	42.1	A-3876*	T22S45*	A-2928*	*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: FADA PART No.	JENSEN PART No.		INSTALLATION NOTES
29	FIELD PM	VC IMP. 3.1Ω	107.16	ST-113 Mod. P4-X		
30	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

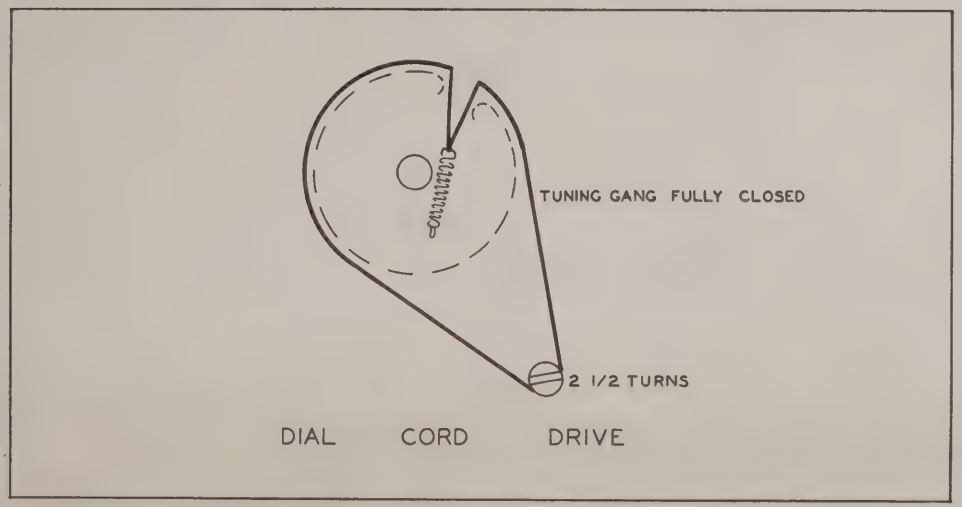
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: FADA PART No.	MEISSNER PART No.	
31	Loop Ant.		3Ω	37.56		Model 740 (Part No. 37.63 for Model 711)
32	Osc. Coil		6.5Ω	37.57	14-1040	
33	Input IF	19Ω	19Ω	37.62	16-6668	
34	Output IF	19Ω	19Ω	37.62	16-6669	

DIAL LIGHT

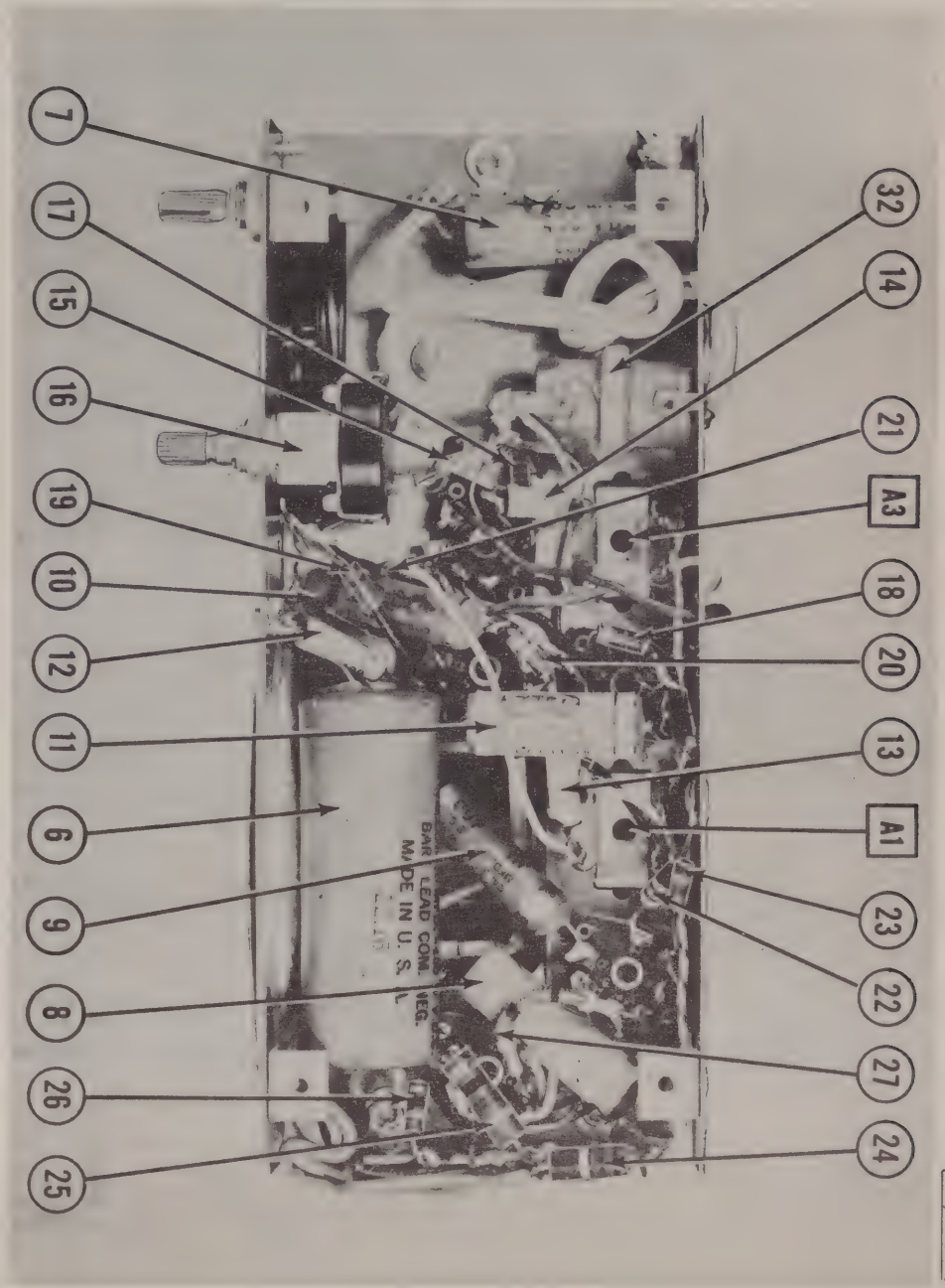
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: FADA PART No.		INSTALLATION NOTES
35	Bayonet	6-8	0.15	Brown			Type 47

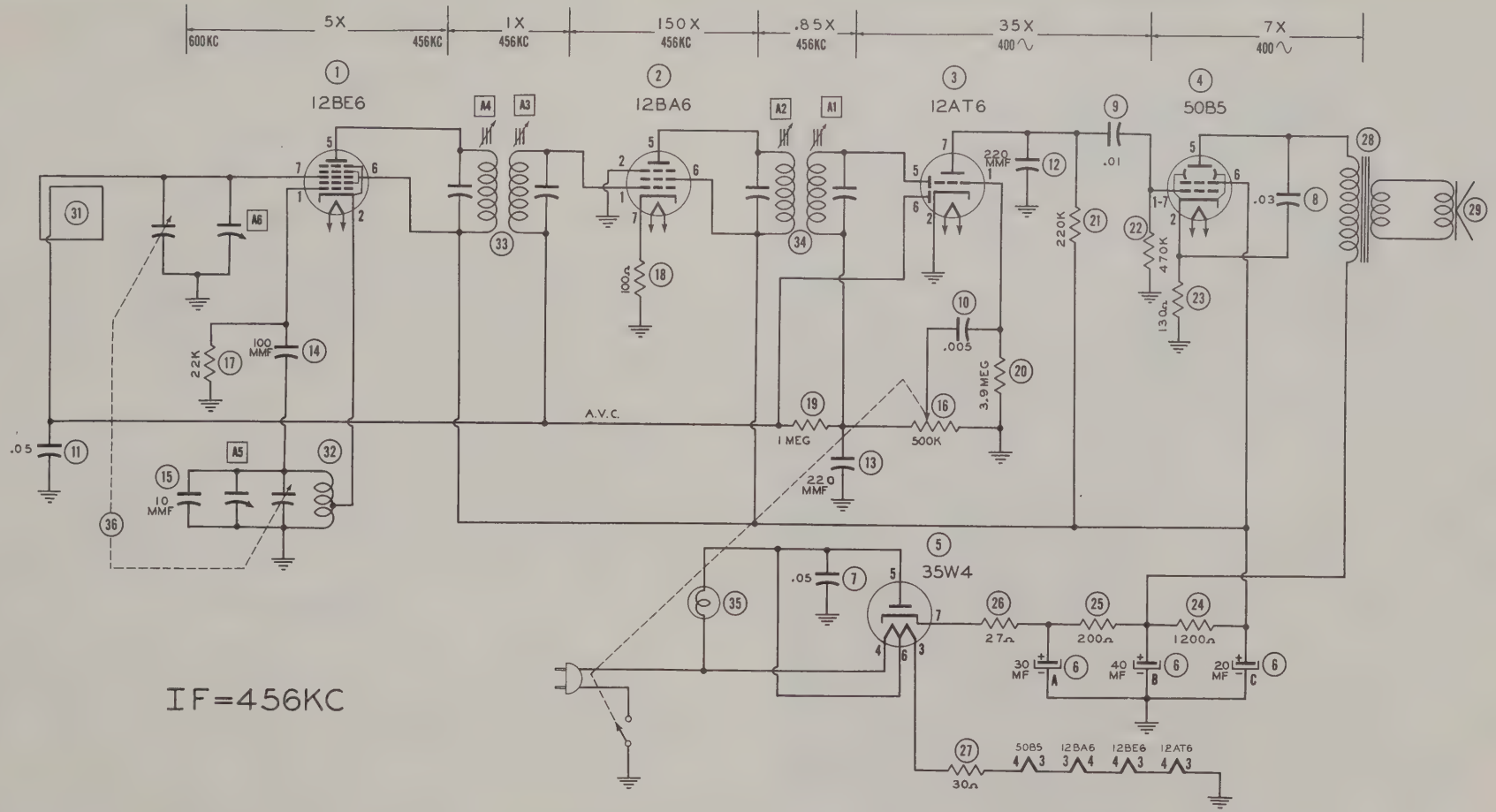
MISCELLANEOUS

ITEM No.	PART NAME	FADA PART No.	NOTES
36A	2 Gang Var. Cap.	27.17	(28-465 MMF, 21-184 MMF) Model 740
B	" " " "	27.15	Model 711
	Dial Scale	77.86	
	Dial Pointer	77.87	
	Dial Crystal	77.85	
	Cabinet	97.73W	Walnut
	"	97.73V	Ivory



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	-16VDC§	0V.	12VAC	24VAC	83VDC	83VDC	-.6VDC
2	12BA6	-.6VDC	0V.	36VAC	24VAC	83VDC	83VDC	.7VDC
3	12AT6	-.6VDC	0V.	0V.	12VAC	-.5VDC	-.6VDC	42VDC
4	50B5	0V.	5VDC	36VAC	82VAC	100VDC	83VDC	0V.
5	35W4	0V.	0V.	87VAC	117VAC	113VAC	113VAC	117VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	22KΩ	1Ω	12Ω	24Ω	80KΩ	80KΩ	1.4 Meg.
2	12BA6	1.4 Meg.	0Ω	35Ω	24Ω	80KΩ	80KΩ	95Ω
3	12AT6	4 Meg.	0Ω	0Ω	12Ω	500KΩ	1.4 Meg.	300KΩ
4	50B5	500KΩ	130Ω	35Ω	85Ω	80KΩ	80KΩ	500KΩ
5	35W4	INF.	INF.	110Ω	140Ω	135Ω	135Ω	80KΩ

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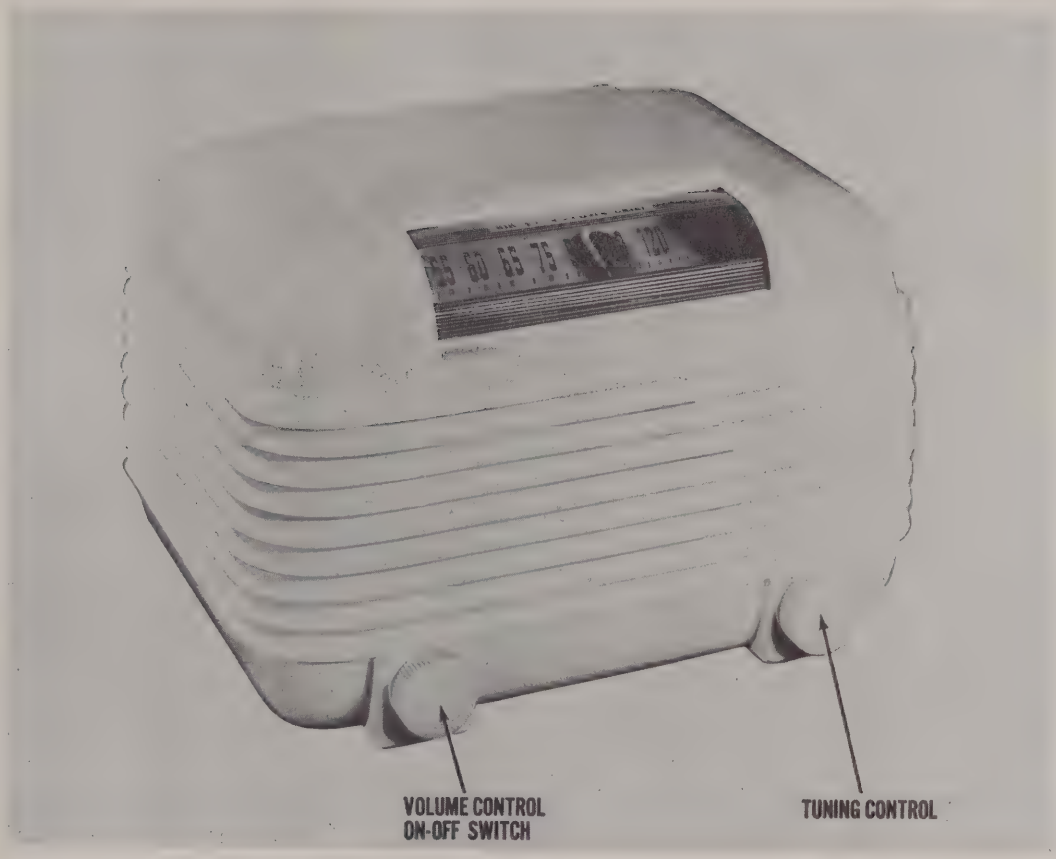
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

4718-10

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

FIRESTONE (AIR CHIEF)
MODEL 4-A-10 (CODE No. 297-7-RN228)



AIR CHIEF MODEL 4-A-10

TRADE NAME	Firestone (Air Chief), Model 4-A-10 (Code No. 297-7-RN228)
SUPPLIER	The Firestone Tire & Rubber Co., Akron, Ohio
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7 Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	535-1620KC
RATING	.230 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.02 MFD	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	250MMFD	High side to ext. ant. lead. Low side to chassis.	1620KC	"	"	A4	Adjust for maximum output.
3	250MMFD	"	1400KC	Tune for maximum output.	"	A5	" " " "

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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DATE 11/47 SET #28 FOLDER #4718-11

PARTS LIST AND DESCRIPTIONS

FIRESTONE (AIR CHIEF) MODEL A-A-1((Code #227-7-R[illegible]28)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIR CHIEF PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7	12SA7	8R	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7	12SQ7	8Q	
4	Power Output	35L6GT	35L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIR CHIEF PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	35	150	N-5193	2N511	DSB-2x40-150	TA-430	PRSA150-40-30	BRD4415	Filter - Blue
B	30	150							" - Red
7	.05	400	N-1346	TP426	S-4-05	TC-15	484-05	DT4S5	Rect. Bypass
8	.02	400	N-1376	TP423	S-4-02	TC-12	484-02	DT4S2	Output Plate Bypass
9	.01	400	N-1344	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.0005	600	N-4890	TP403	S-6-0005	TC-35	1468-0005	DT6T5	AF Plate Bypass
11	.005	600	N-4894	TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
12	.05	200	N-1345	TP426	S-4-05	TC-15	484-05	DT4S5	Line Isolation
13	.05	200	N-1345	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
14	100	500	N-1681	MC235	MO.5-31	1FM-31	1468-0001	SW5T1	Diode RF Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR CHIEF PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
15A	500KΩ	½	N-5135	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 15A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

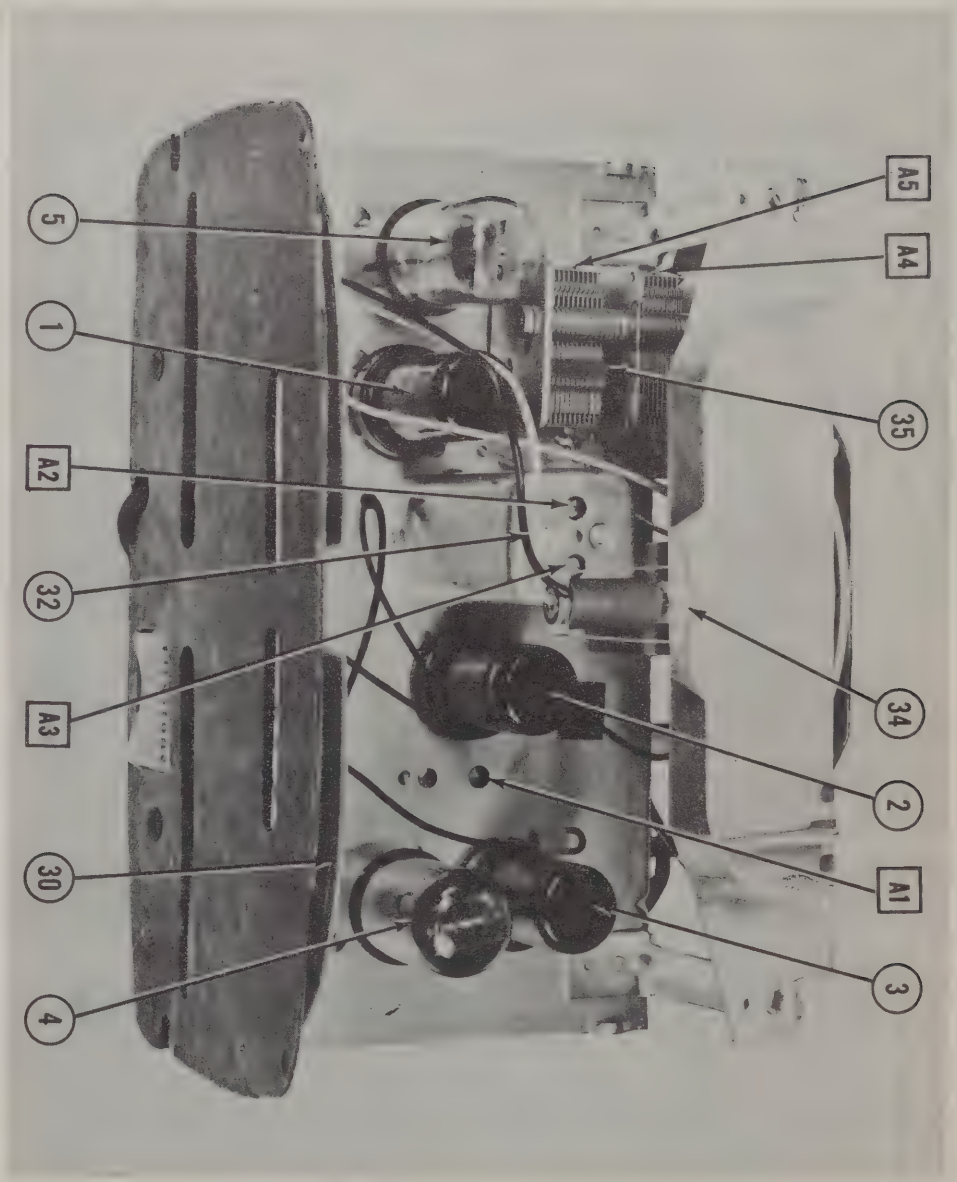
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR CHIEF PART No.	IRC PART No.	IDENTIFICATION CODES
16	22KΩ	½	N-4025	BTS-22K	Red-Red-Or. Oscillator Grid
17	220KΩ	½	N-4026	BTS-220K	Red-Red-Yl. Line Isolation
18	1 Meg.	½	N-1262	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
19	47KΩ	½	N-4087	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
20	6.8 Meg.	½	N-4028	BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
21	220KΩ	½	N-4026	BTS-220K	Red-Red-Yl. AF Plate Load
22	470KΩ	½	N-4027	BTS-470K	Yl.-Vi.-Yl. Output Grid
23	180Ω	½	N-4067	BW-½-180	Br.-Gray-Br. Output Cathode
24	1000Ω	1	N-5358	BTA-1000	Br.-Blk.-Red Filter
25	33Ω	½	N-4022	BW-½-33	Or.-Or.-Blk. Surge Limiter
26	82Ω	2	N-4023	BW-2-82	Gray-Red-Blk. Line Dropping

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIR CHIEF PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
27	2100Ω	3.5Ω	146Ω tapped @ 6Ω	.4Ω	N-4375	A-3876*		A-2928*	*Add extra filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: AIR CHIEF PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
	FIELD	VC IMP.		ST-113		
28	PM	3.5Ω	N-4318	Mod. P4-X		
	CONE DIA.	VC DIA.				
29	4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

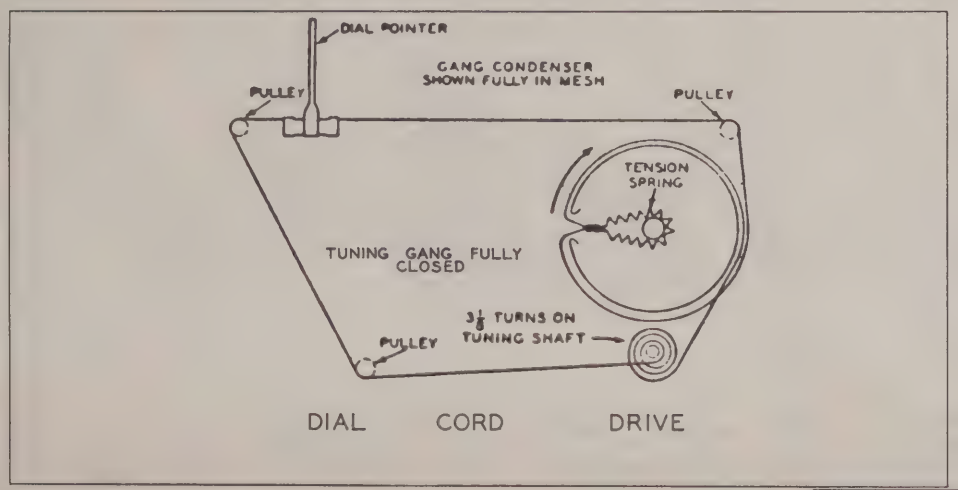
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: AIR CHIEF PART No.	REPLACEMENT DATA: MEISSNER PART No.	
30	Loop Ant.	.1Ω	1.5Ω	N-5183		
31	Osc. Coil	.8Ω	6.1Ω	N-4810	14-1040	Add 50MMF from grid to high side tuning cap.
32	Input IF	21Ω	20Ω	N-4813	16-6658	
33	Output IF	29Ω	29Ω	N-4846		

DIAL LIGHT

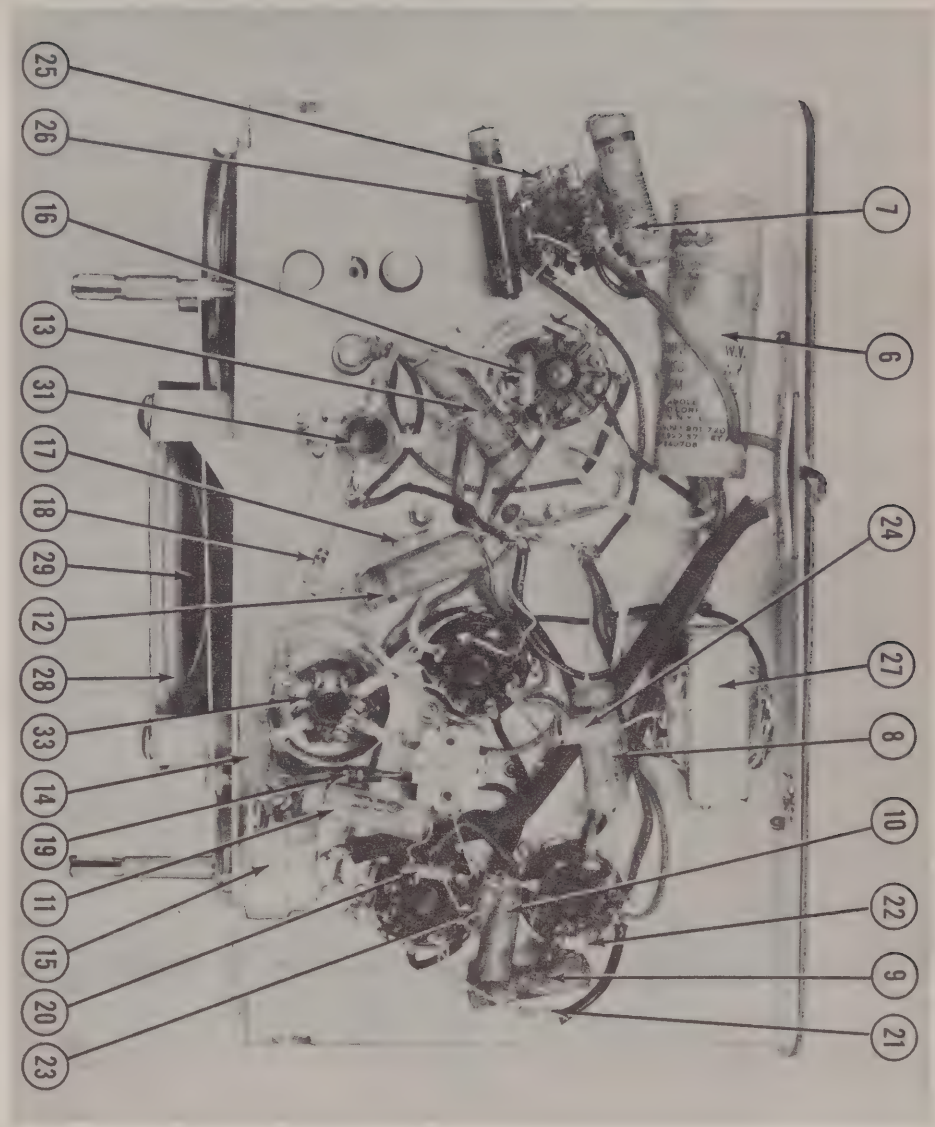
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: AIR CHIEF PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
34	Bayonet	6-8	0.15	Brown	N-1147		Type 47

MISCELLANEOUS

ITEM No.	PART NAME	AIR CHIEF PART No.	NOTES
35	2 Gang Var. Cap.	N-5181	22-388MMF, 38-200MMF
	Dial Scale	N-5182	
	Dial Pointer	N-5939	
	Knob	N-5041	Ivory



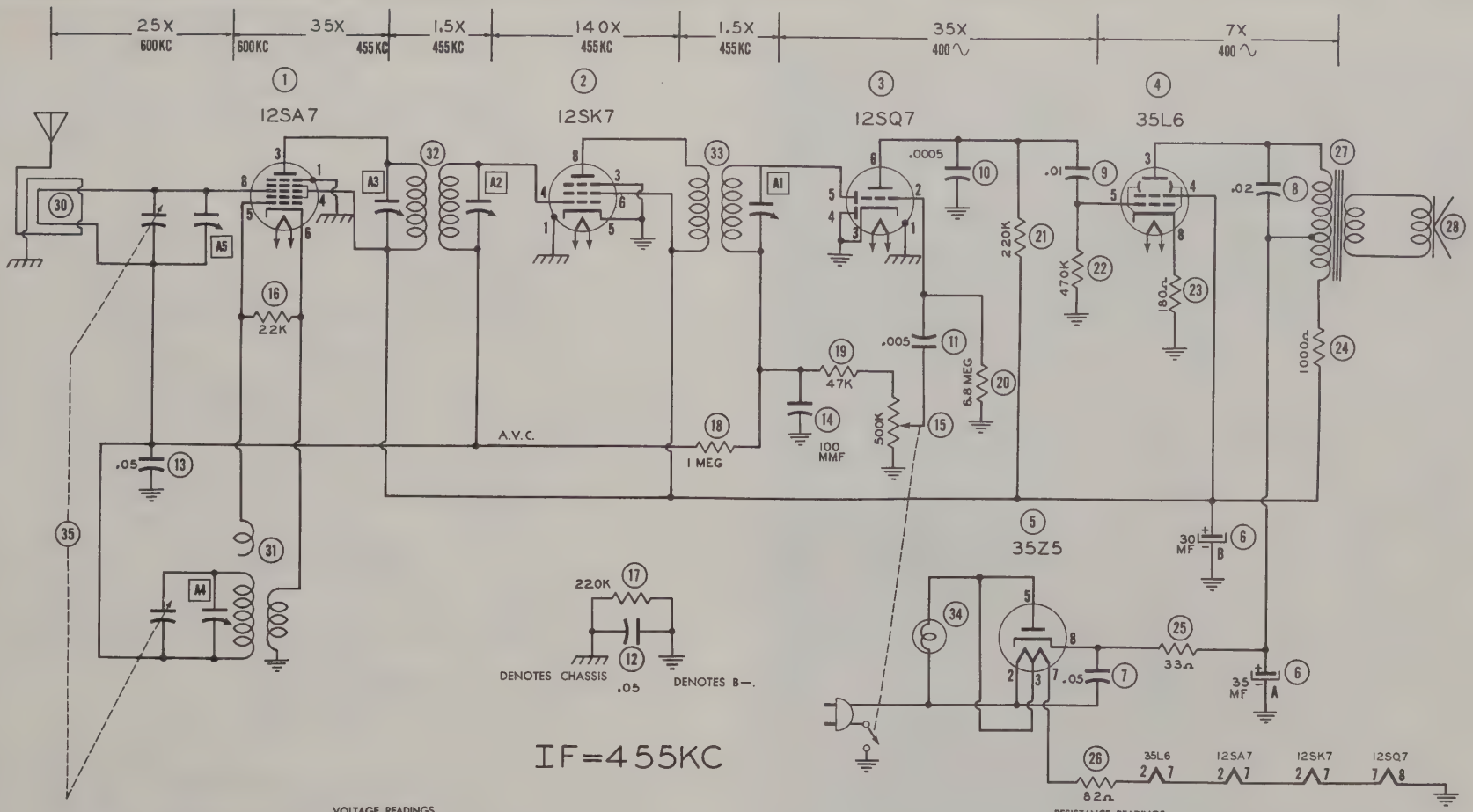
CHASSIS—BOTTOM VIEW



DATE 11/47 SET #28 FOLDER #4718-11

FIRESTONE (AIR CHIEF) MODEL 4-A-10 (Code # 297-7-RN228)

FIRESTONE (AIR CHIEF) MODEL 4-A-10 (Code # 297-7-RN228)



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0V.	35VAC	88VDC	88VDC	-14VDC§	0V.	24VAC	-.1VDC
2	12SK7	0V.	24VAC	0V.	-.1VDC	0V.	88VDC	12VAC	88VDC
3	12SQ7	0V.	-.5VDC	0V.	-.3VDC	0V.	57VDC	12VAC	0V.
4	35L6GT	0V.	75VAC	108VDC	88VDC	0V.	0V.	35VAC	6.6VDC
5	35Z5GT	0V.	117VAC	112VAC	75VAC	112VAC	113VDC	87VAC	115VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	240KΩ	38Ω	50KΩ	50KΩ	22KΩ	.8Ω	25Ω	1.6 Meg.
2	12SK7	240KΩ	25Ω	0Ω	1.6 Meg.	0Ω	50KΩ	12Ω	50KΩ
3	12SQ7	240KΩ	7 Meg.	0Ω	560KΩ	0Ω	270KΩ	12Ω	0Ω
4	35L6GT	INF.	80Ω	50KΩ	50KΩ	500KΩ	0Ω	38Ω	180Ω
5	35Z5GT	INF.	190Ω	185Ω	80Ω	185Ω	50KΩ	160Ω	50KΩ

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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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4718-11

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

FIRESTONE (AIR CHIEF)
MODEL 4-A-27

FIRESTONE (AIR CHIEF)
MODEL 4-A-27

AIR CHIEF MODEL 4-A-27

TRADE NAME	Firestone (Air Chief) Model 4-A-27
SUPPLIER	Firestone Tire & Rubber Co., Akron, Ohio
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7 Converter, 12SK7 IF Amp. 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	540-1630KC RATING .260 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to front stator of tuning cap. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	250MMFD	High side to ext. ant. lead. Low side to chassis.	1630KC	"	"	A5	Adjust for maximum output.
3	250MMFD	"	1400KC	Tune for maximum output.	"	A6	Rock tuning cap. and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIR CHIEF PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7	12SA7	8R	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7	12SQ7	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIR CHIEF PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	30	150	B18-283	2N513	DSB-2x30-150	TA-330	PRSA150-30-30	EZ3315	Filter - Red
B	30	150							" - Yellow
7	.05	400	A16-158	TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
8	.01	400	A16-156	TP421	S-4-01	TC-11	484-01	DT4S1	Output Plate Bypass
9	.01	400	A16-156	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.005	600	A16-153	TP408	S-6-005	TC-25	684-005	DT6D5	" "
11	.05	200	A16-152	TP426	S-4-05	TC-15	484-05	DT4S5	RF Bypass Pwr. Supply
12	.05	200	A16-152	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
13	.01	400	A16-156	TP421	S-4-01	TC-11	484-01	DT4S1	Ext. Ant. Isolation
14	250	500	A15-176	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	AF Plate Bypass
15	250	500	A15-176	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Diode RF Filter
16	50	500	A15-175	MC225	MO.5-31	1FM-45	1468-00005	5W5_5	Osc. Grid

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR CHIEF PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17A	1 Meg.	½	24-157	MK402	D13-137	AM-63-2	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 17A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

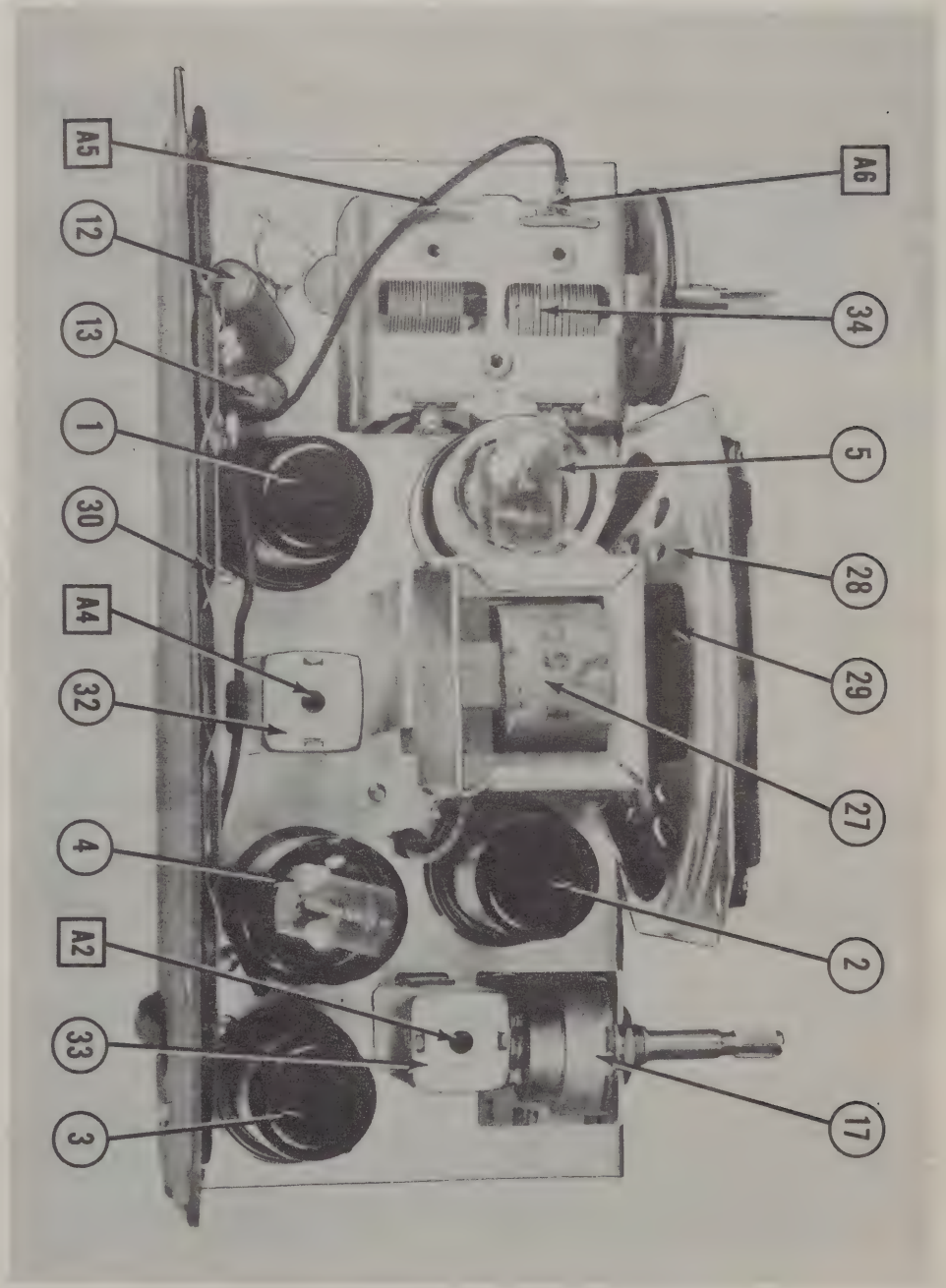
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR CHIEF PART No.	IRC PART No.	IDENTIFICATION CODES
18	22KΩ	½	A60-659	BTS-22K	Red-Red-Or. Oscillator Grid
19	2.2 Meg.	½	A60-684	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
20	10 Meg.	½	A60-663	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
21	220KΩ	½	A60-667	BTS-220K	Red-Red-Yl. AF Plate Load
22	470KΩ	½	A60-662	BTS-470K	Yl.-Vi.-Yl. Output Grid
23	120Ω	½	A60-702	BW-½-120	Br.-Red-Br. Output Cathode
24	10KΩ	1	A60-698	BTA-10K	Br.-Blk.-Or. Bleeder
25	1000Ω	2	A60-732	BT-2-1000	Br.-Blk.-Red Filter
26	27Ω	½	A60-690	BW-½-27	Red-Vi.-Blk. Rectifier Ballast

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIR CHIEF PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
27	4500Ω	3.4Ω	240Ω	.4Ω	A80-223	A-3876*	T22S46*	A-2901*	*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

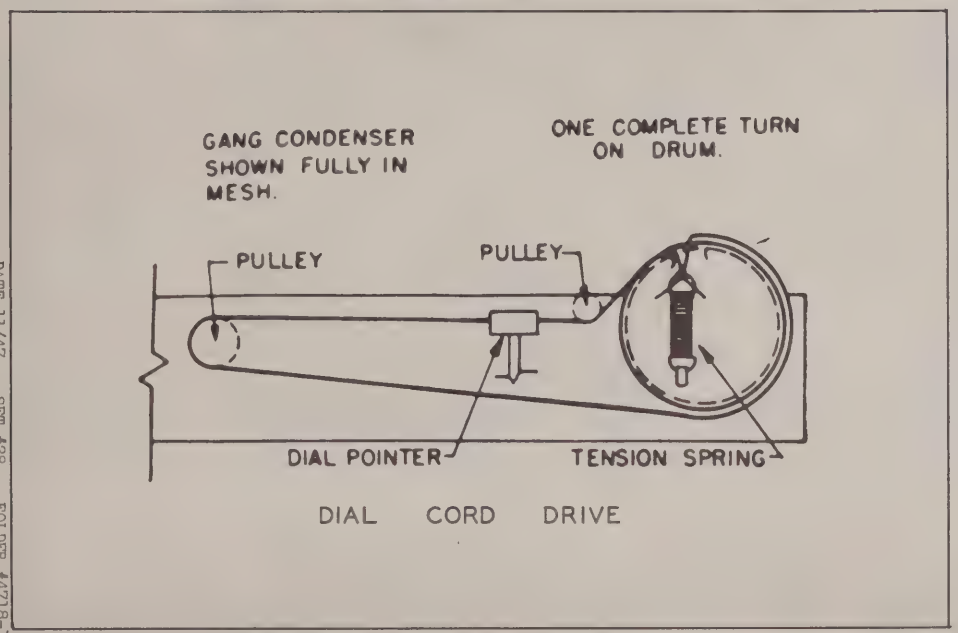
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIR CHIEF PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-113†		†Fabricate new mounting bracket.
28	PM	3.4Ω	79-316	Mod. P4-X		
	CONE DIA.	VC DIA.				
29	4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIR CHIEF PART No.	MEISSNER PART No.	
30	Loop Ant.	.1Ω	1.5Ω	B82-46		
31	Osc. Coil		5Ω	B10-480	14-1040	
32	Input IF	19Ω	28Ω	A-10-478	16-6668	
33	Output IF	21Ω	21Ω	A-10-479	16-6669	

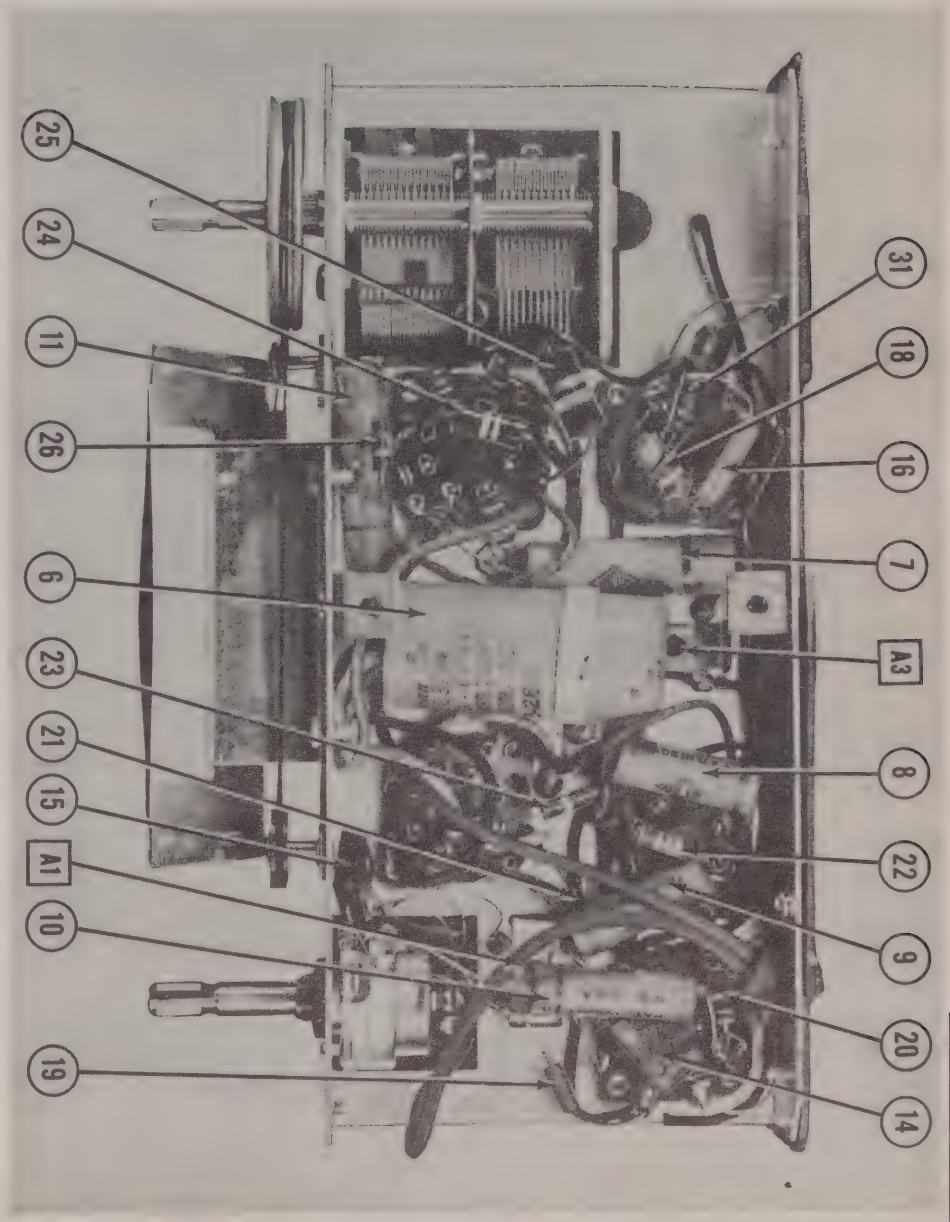
MISCELLANEOUS

ITEM No.	PART NAME	AIR CHIEF PART No.	NOTES
34	2 Gang Var. Cap.	19-173	
	Dial Crystal	48-34	
	Dial Pointer	58-37	
	Dial Scale	B67-506	
	Cabinet	A42-425	Molded White
	Cabinet Back	C83-468	
	Knob	A52-226	

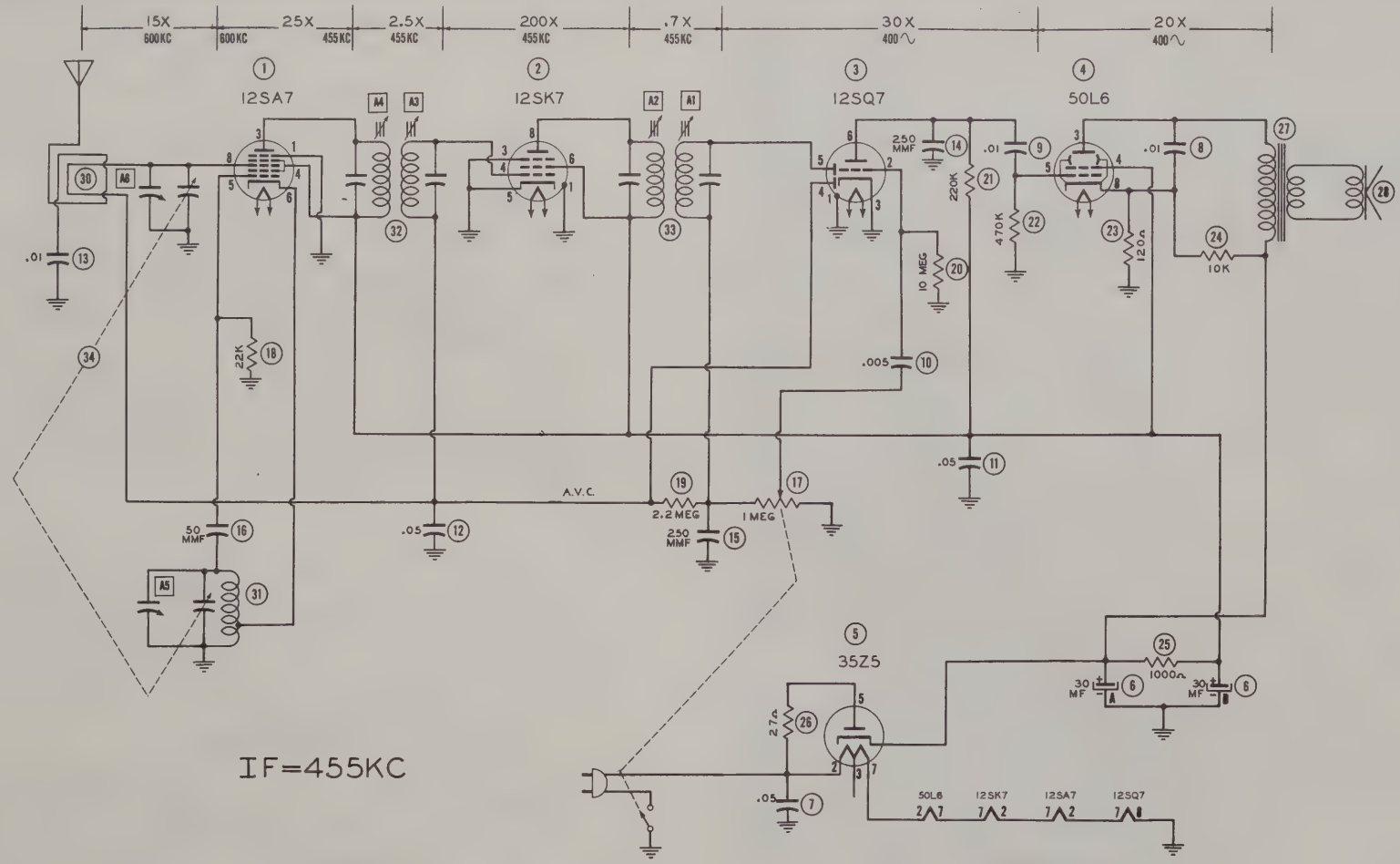


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



FIRESTONE (AIR CHIEF) MODEL 4-A-27



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0V.	12VAC	90VDC	90VDC	-9.4VDC§	0V.	24VAC	-.4VDC
2	12SK7	0V.	24VAC	0V.	-.4VDC	0V.	90VDC	36VAC	90VDC
3	12SQ7	0V.	-.6VDC	0V.	-.4VDC	-.4VDC	60VDC	12VAC	0V.
4	50L6GT	0V.	85VAC	107VDC	90VDC	0V.	0V.	36VAC	6VDC
5	35Z5GT	0V.	117VAC	110VAC	6VDC	115VAC	90VDC	85VAC	117VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0Ω	12Ω	11KΩ	11KΩ	22KΩ	.6Ω	24Ω	4 Meg.
2	12SK7	0Ω	24Ω	0Ω	4 Meg.	0Ω	11KΩ	38Ω	11KΩ
3	12SQ7	0Ω	10 Meg.	0Ω	4 Meg.	1.2 Meg.	230KΩ	12Ω	0Ω
4	50L6GT	0Ω	87Ω	10KΩ	11KΩ	500KΩ	INF.	38Ω	120Ω
5	35Z5GT	0Ω	120Ω	115Ω	120Ω	145Ω	11KΩ	87Ω	10KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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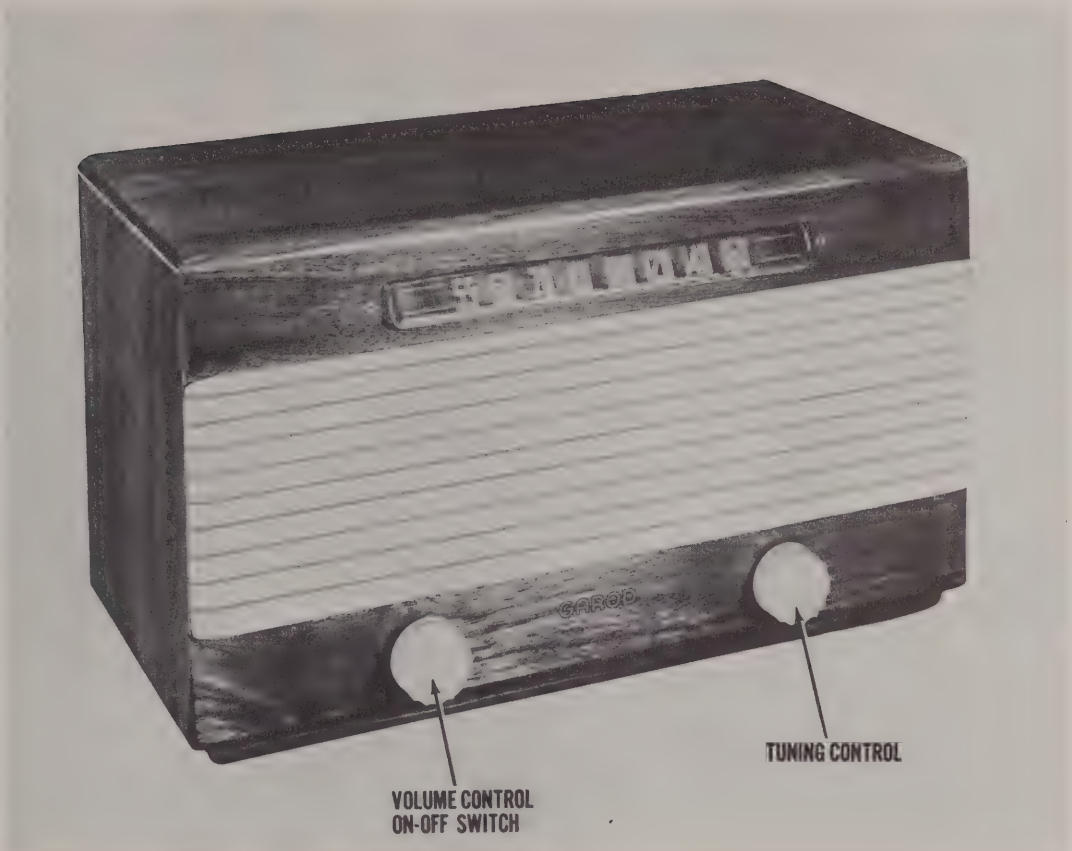
4718-12

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GAROD
MODEL 6A-2



GAROD
MODEL 6A-2

GAROD MODEL 6A-2

TRADE NAME	Garod, Model 6A-2
MANUFACTURER	Garod Radio Corp., 70 Washington St., Brooklyn (1), N.Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types, 6SS7 RF Amp., 12SA7GT Converter, 6SS7 IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1650KC RATING .230 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2		Loop	1650KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		"	1500KC	Tune for maximum output.	"	A6	"

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DATE 11/47 SET #28 FOLDER #4718-13

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: GAROD PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SS7	6SS7	8N	
2	Converter	12SA7GT	12SA7GT	8AD	
3	IF Amp.	6SS7	6SS7	8N	
4	Det.-AVC-AF	12SQ7	12SQ7	8Q	
5	Power Output	50L6GT	50L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GAROD PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7	20	150		TC45		UT-201	PRS150-20		Filter
8A	80	150	5.400-7	FP357‡	DY-804020-150	EL-340‡	AF888D‡	UP84215	■ "
B	40	150							▲ "
9	.05	400		TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
10	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Output Plate Bypass
11	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
12	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
13A	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	IF Cathode Bypass
B	.01	200		TP421	S-4-01	TC-11	484-01	DT4S1	Output Plate Bypass
14	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	AVC Filter
15	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	" "
16	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	Ext. Ant. Isolation
17	.2	400		TP429	S-4-2	TC-2	484-.2	DT4P2	Line Isolation
18	250	500		MC240	MO.5-325	1FM-325	1468-00025	5W5T25	AF Plate Bypass
19	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Tone Comp.
20	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Diode RF Filter
21	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	RF Coupling

‡Parallel sections to obtain desired capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GAROD PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
22A	1 Meg.	½	8.200	MK402†	D13-137†	AM-63-Z†	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 22A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

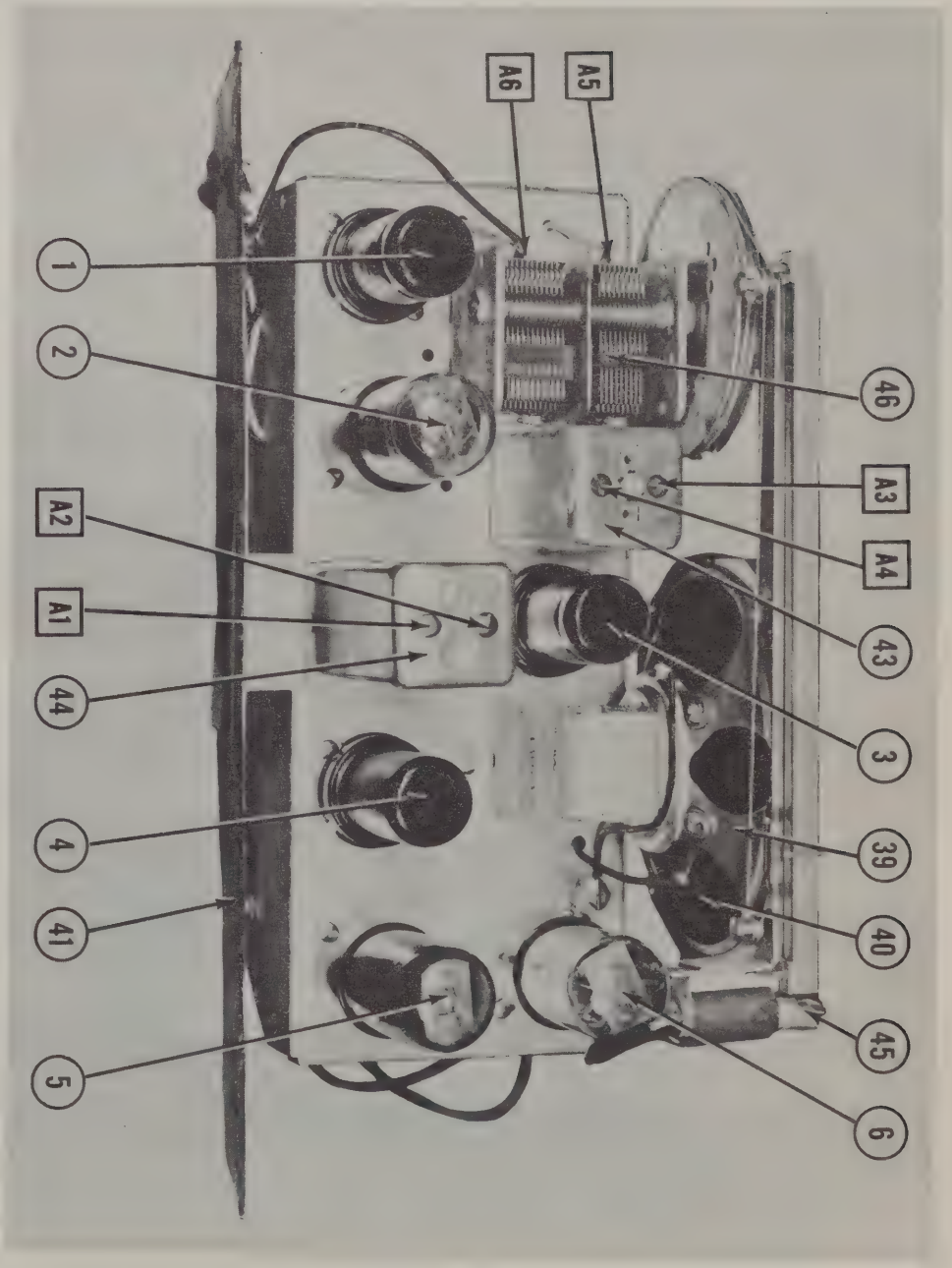
†Install a 47KΩ resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control (controls viewed from shaft side, terminals down.)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GAROD PART No.	IRC PART No.	IDENTIFICATION CODES
23	2200Ω	¼		BTS-2200	Red-Red-Red-RF Plate Load
24	1 Meg.	¼		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
25	1 Meg.	¼		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
26	470KΩ	¼		BTS-470K	Yl.-Vi.-Yl. Converter Grid
27	220KΩ	¼		BTS-220K	Red-Red-Yl. Line Isolation
28	22KΩ	¼		BTS-22K	Red-Red-Or. Osc. Grid
29	270Ω	½		BW-½-270	Red-Vi.-Br. IF Cathode
30	1 Meg.	¼		BTS-1 Meg.	Br.-Blk.-Grn. 1st IF Trans. Shunt-See Note
31	2.2 Meg.	¼		BTS-2.2 Meg.	Red-Red-Grn. 1st AF Grid Load
32	220KΩ	¼		BTS-220K	Red-Red-Yl. 1st AF Plate Load
33	470KΩ	¼		BTS-470K	Yl.-Vi.-Yl. Output Grid
34	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
35	1000Ω	1		BTA-1000	Br.-Blk.-Red Filter
36	100Ω	½		BW-½-100	Br.-Blk.-Br. Filter
37	270Ω	¼		BW-½-270	Red-Vi.-Br. Pilot Light Shunt

Note-Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GAROD PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
38	1650Ω	3.1Ω	150Ω	.45Ω	9.200	A-3876	T22S45	A-2923	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GAROD PART No.	JENSEN PART No.		
39	FIELD	VC IMP.	30.300	ST-107* Mod. P5-V		*Fabricate new mounting bracket and trim flange.
	PM	3.1Ω				
40	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

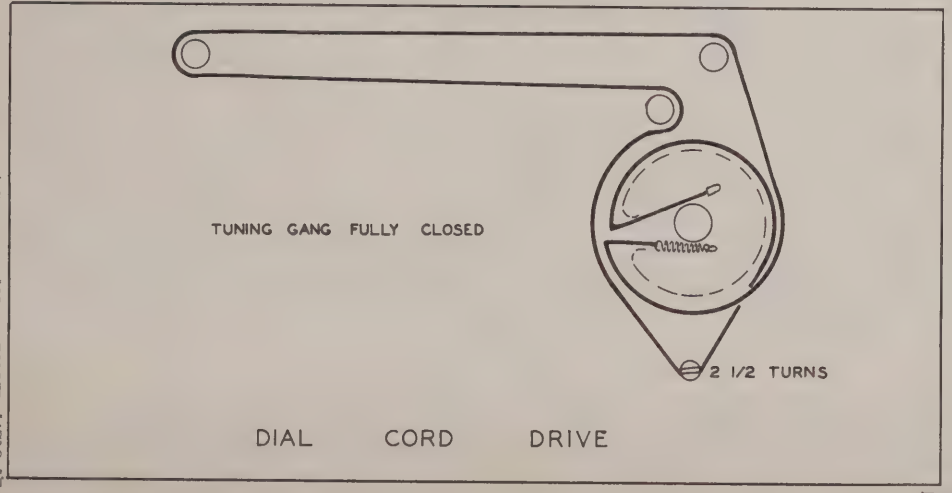
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	GAROD PART No.	MEISSNER PART No.	
41	Loop Ant.	.3Ω	3.5Ω	1.411		
42	Osc. Coil	1Ω	8Ω	1.402-1	14-1040	Add 50MMFD from grid to high side tuning cap.
43	Input IF	43Ω	42Ω	1.259	16-6658	
44	Output IF	42Ω	44Ω	1.409	16-6660	

DIAL LIGHT

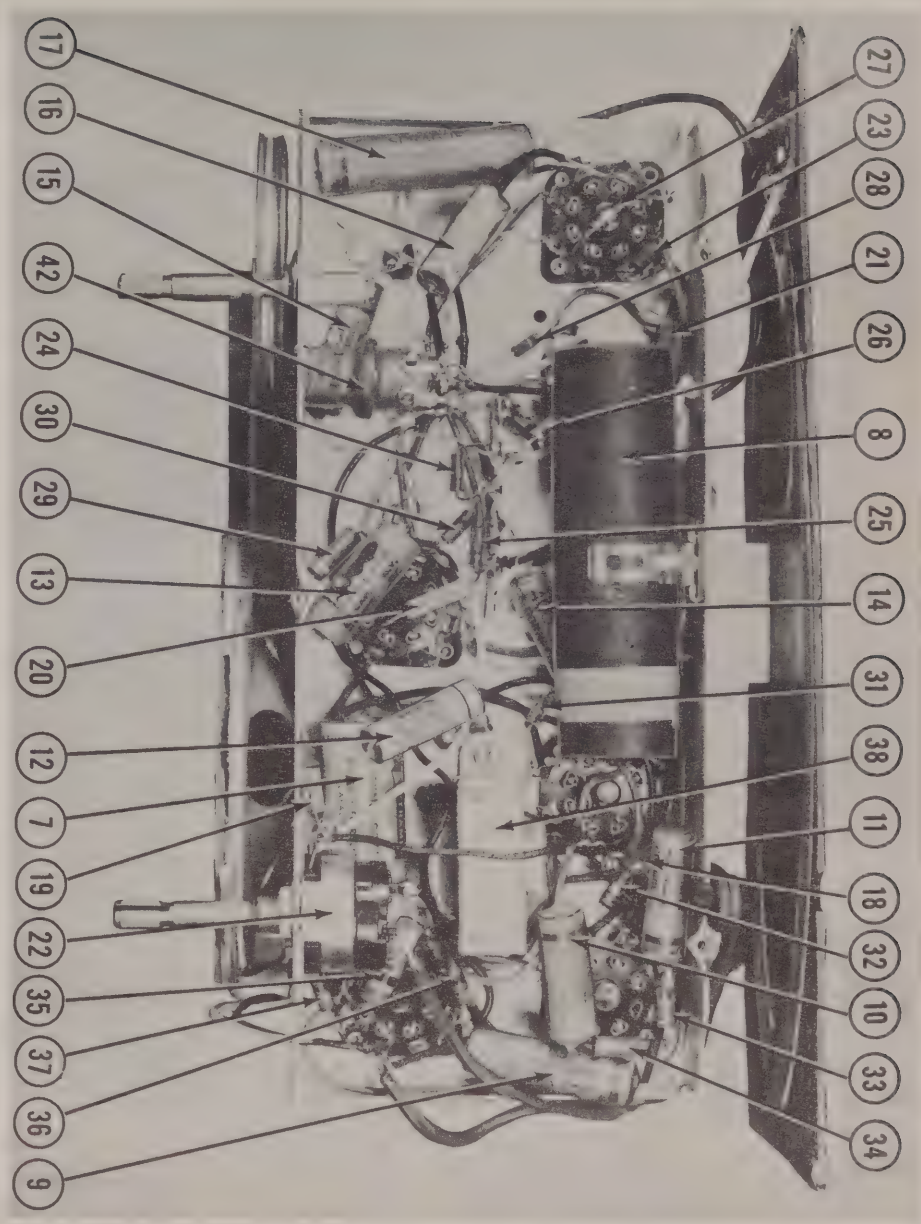
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					GAROD PART No.		
45	Bayonet	6-8	0.15	Brown			Type 47

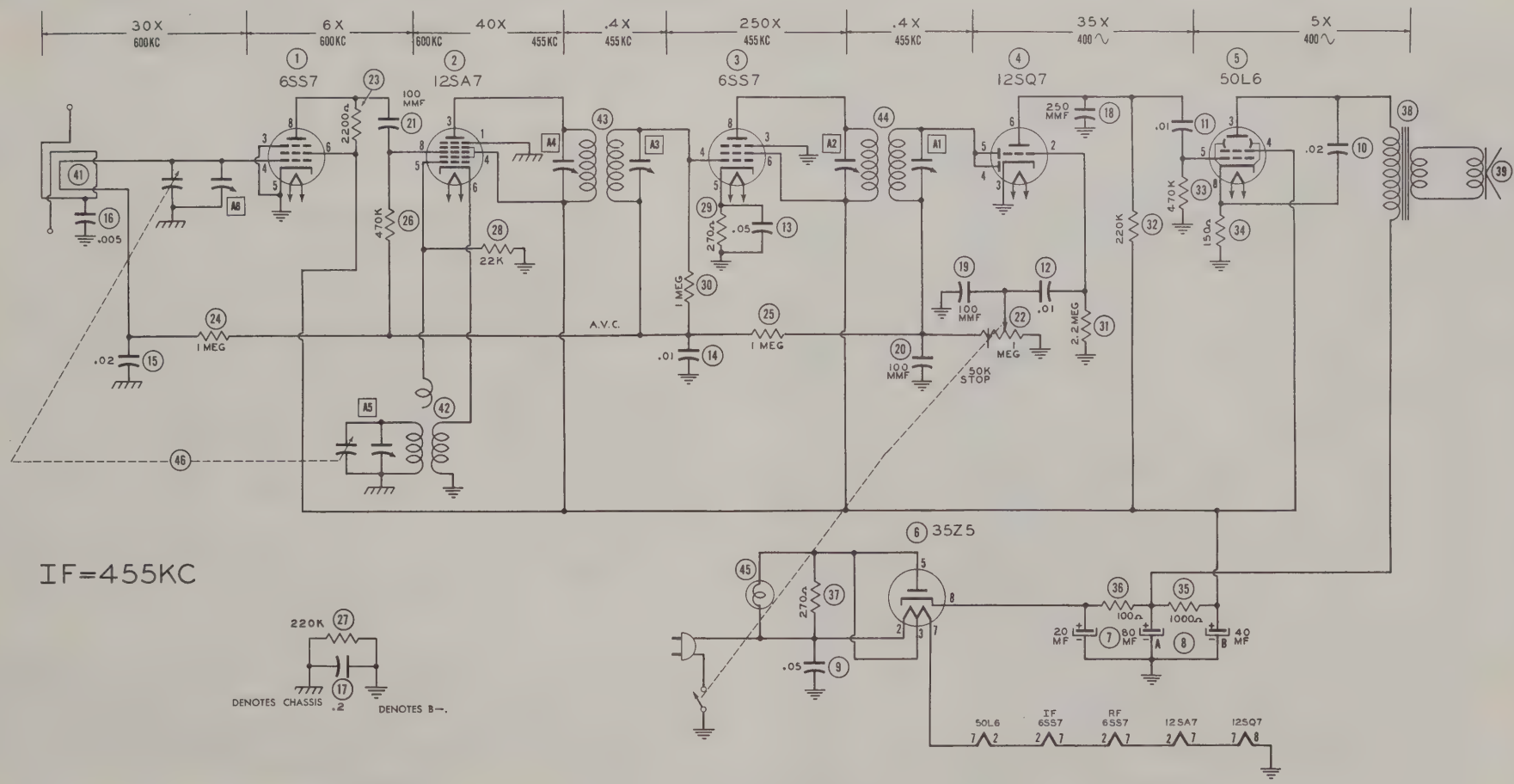
MISCELLANEOUS

ITEM No.	PART NAME	GAROD PART No.	NOTES
46	2 Gang Var. Cap.	2.163	18-371 MMF, 18-182 MMF



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SS7	0V.	32VAC	0V.	-.6VDC	0V.	80VDC	26VAC	55VDC
2	12SA7GT	0V.	13VAC	80VDC	80VDC	-9.2VDC§	0V.	26VAC	-.2VDC
3	6SS7	0V.	38VAC	0V.	-.2VDC	1.9VDC	80VDC	32VAC	80VDC
4	12SQ7	0V.	-.8VDC	0V.	-.6VDC	-.6VDC	50VDC	13VAC	0V.
5	50L6GT	0V.	38VAC	105VDC	80VDC	0V.	0V.	88VAC	5.1VDC
6	35Z5GT	0V.	117VAC	113VAC	80VDC	113VAC	108VDC	88VAC	116VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SS7	210KΩ	30Ω	0Ω	3 Meg.	0Ω	40KΩ	25Ω	40KΩ
2	12SA7GT	210KΩ	12Ω	40KΩ	40KΩ	22KΩ	.8Ω	25Ω	2.5 Meg.
3	6SS7	210KΩ	36Ω	0Ω	2 Meg.	270Ω	40KΩ	30Ω	40KΩ
4	12SQ7	210KΩ	2.5 Meg.	0Ω	1 Meg.	1 Meg.	260KΩ	12Ω	0Ω
5	50L6GT	INF.	36Ω	40KΩ	40KΩ	500KΩ	0Ω	85Ω	160Ω
6	35Z5GT	INF.	112Ω	110Ω	40KΩ	110Ω	40KΩ	85Ω	40KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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4718-13

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

GLOBE
MODEL 7CP-1

GLOBE
MODEL 7CP-1

GLOBE MODEL 7CP-1

TRADE NAME	Globe, Model 7CP-1
MANUFACTURER	Globe Electronics, Inc., 225 W. 17th St., New York, N.Y.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne Receiver with Loop Ant.
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	540-1650KC RATING .240 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with base of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation.
2	200MMFD	High side to ext. ant. lead. Low side to ext. ground lead.	1500KC	1500KC	"	A5	Adjust for maximum output.
3	200MMFD	"	1400KC	Tune for maximum output.	"	A6	" " " "

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DATE 11/47 SET #28 FOLDER #4718-14

PARTS LIST AND DESCRIPTIONS

GLOBE
MODEL 7CP-1

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		GLOBE PART No.	STANDARD REPLACEMENT		
1	Converter		12SA7GT	8AD	
2	IF Amp.		12SK7GT	8N	
3	Det.-AVC-AF		12SQ7GT	8Q	
4	Power Output		50L6GT	7AC	
5	Rectifier		35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	GLOBE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6A	50	150		2N520	DSB-5030-150	TA-530	PRSA150-50-30	BRD3515	Filter - Green
B	30	150							" - Red
7	.02	400		TP423	MPH-6-02	TC-12	484-02	DT4S2	Line Filter
8	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Output Plate Bypass
9	.01	400		TP421	S-4-02	TC-11	484-01	DT4S1	Audio Coupling
10	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
11	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	200	500		MC237	MO.5-32	1FM-32	1468-0002	5W5T2	AF Plate Bypass
13	200	500		MC237	MO.5-32	1FM-32	1468-0002	5W5T2	Diode RF Filter
14	50	500		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid
15	80			MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Tone Comp.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	GLOBE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
16A	500KΩ	½		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch			M26	41	SW-A	" " " " "

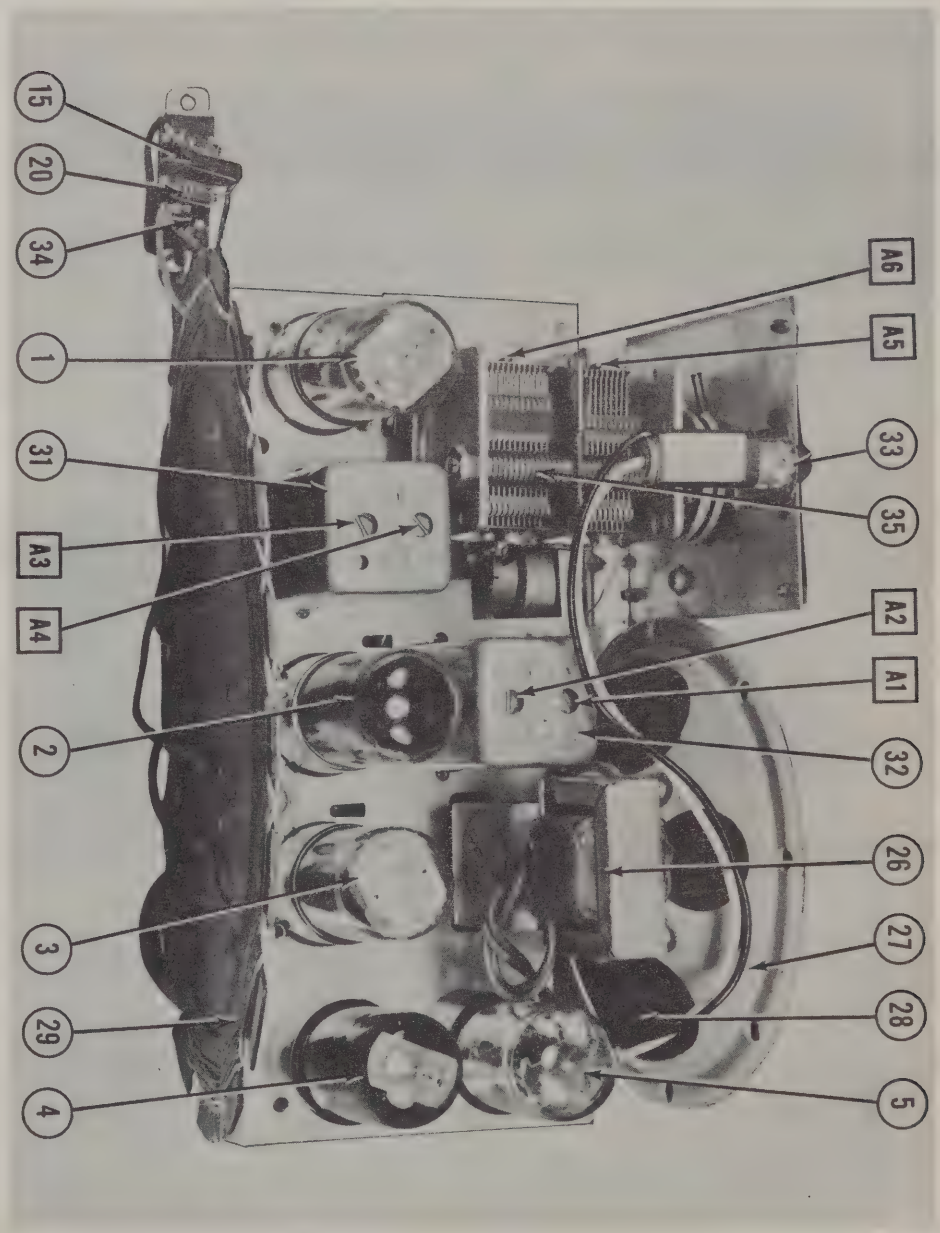
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	GLOBE PART No.	IRC PART No.	
17	21KΩ	½		BTS-22K	Red-Br.-Or. Oscillator Grid
18	6.8 Meg.	½		BTS-6.8 Meg.	Blue-Gray-Grn. AVC Network
19	6.8 Meg.	½		BTS-6.8 Meg.	Blue-Gray-Grn. AVC Network
20	1.5 Meg.	½		BTS-1.5 Meg.	Br.-Grn.-Grn. Series Phono
21	6.8 Meg.	½		BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
22	400KΩ	½		BTS-390K	Y1.-Blk.-Y1. AF Plate Load
23	400KΩ	½		BTS-390K	Y1.-Blk.-Y1. Output Grid
24	120Ω	1		BW-1-120	Br.-Red-Br. Output Cathode
25	1200Ω	1		BTA-1200	Br.-Red-Red Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GLOBE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
26	1750Ω	3.0Ω	210Ω	.5Ω		A-3876*	T22S45*	A-2928*	*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GLOBE PART No.	JENSEN PART No.		
27	FIELD PM	VC IMP. 3.0Ω		ST-107 Mod. P5-V		
28	CONE DIA. 4-3/4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

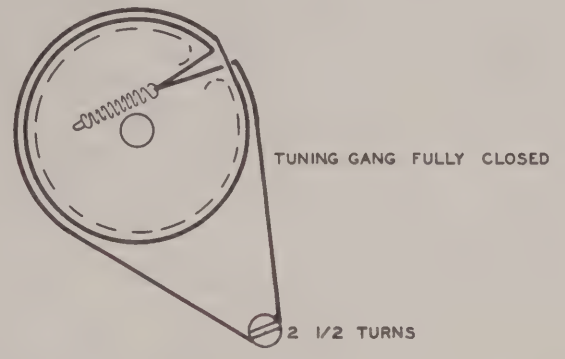
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	GLOBE PART No.	MEISSNER PART No.	
29	Loop Ant.	.1Ω	1.5Ω			
30	Osc. Coil		7Ω		14-1040	
31	Input IF	16Ω	16Ω		16-6658	
32	Output IF	16Ω	16Ω		16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					GLOBE PART No.		
33	Bayonet	6-8	0.15	Brown			Type 47

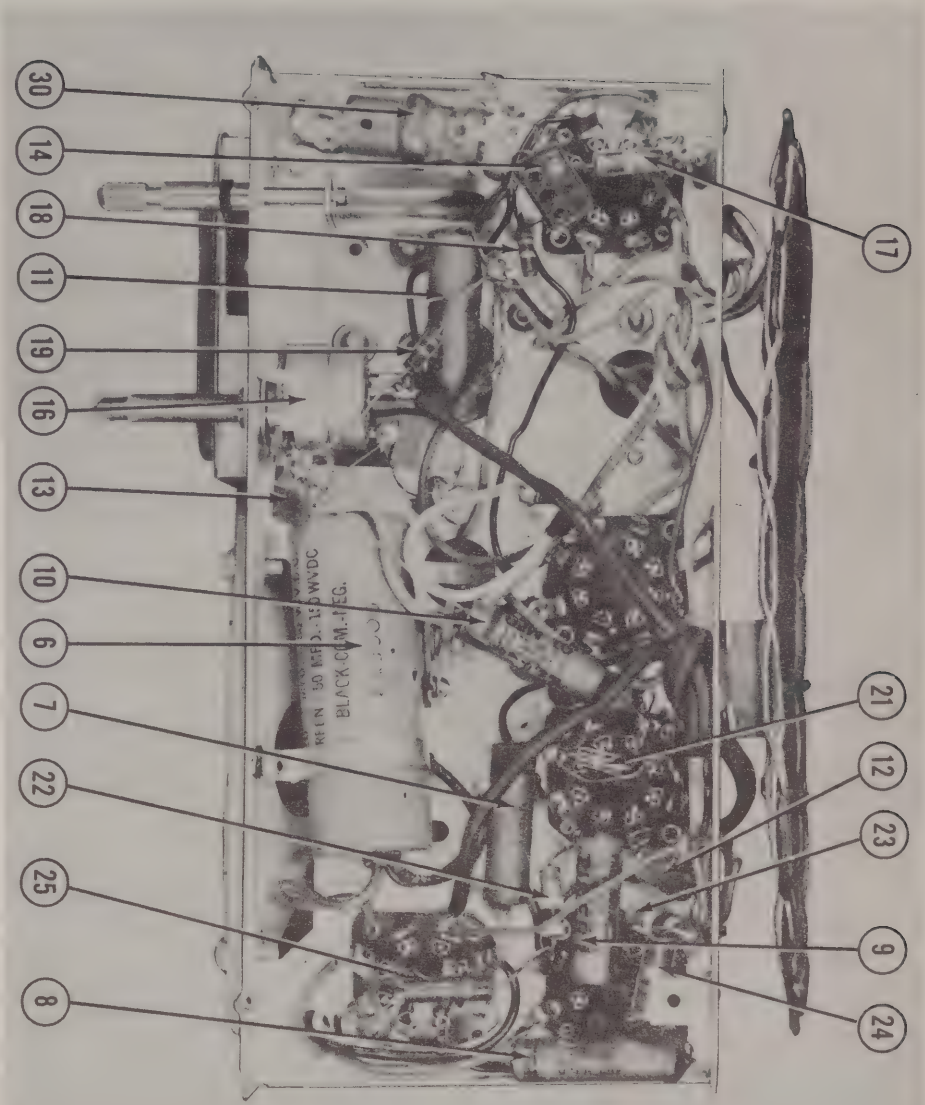
MISCELLANEOUS

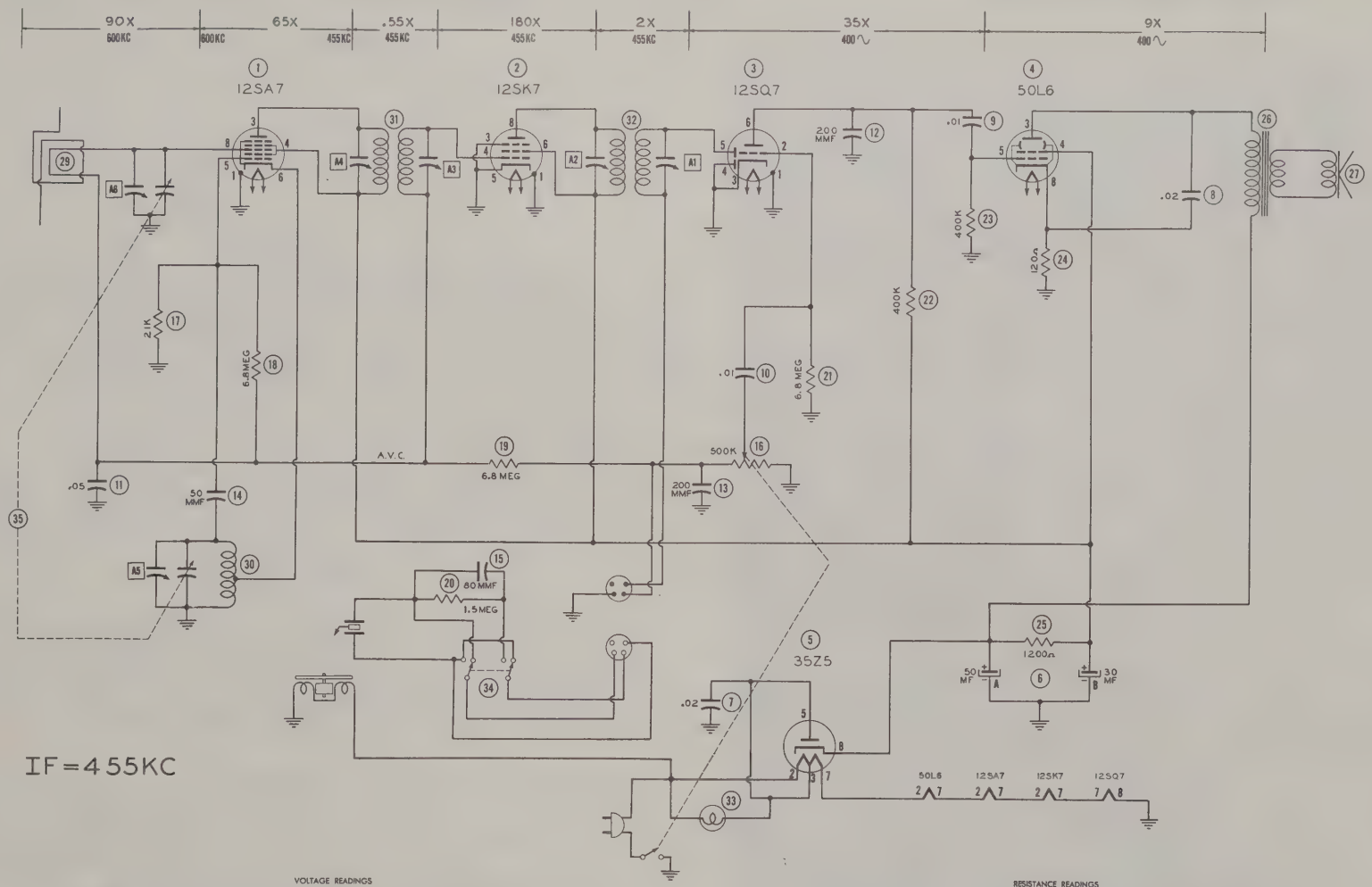
ITEM No.	PART NAME	GLOBE PART No.	NOTES
34	Switch		Radio-Phono
35	2 Gang Var. Cap.		21-424 MMF, 27-176 MMF



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	36VAC	88VDC	88VDC	-7.4VDC§	0V.	24VAC	-.6VDC
2	12SK7GT	0V.	24VAC	0V.	-.6VDC	0V.	88VDC	12VAC	88VDC
3	12SQ7GT	0V.	-.7VDC	0V.	0V.	-.6VDC	55VDC	12VAC	0V.
4	50L6GT	0V.	85VAC	105VDC	88VDC	0V.	0V.	36VAC	5.6VDC
5	35Z5GT	0V.	117VAC	113VAC	0V.	113VAC	0V.	85VAC	114VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0Ω	38Ω	80KΩ	80KΩ	20KΩ	.7Ω	2Ω	4 Meg.
2	12SK7GT	0Ω	25Ω	0Ω	4 Meg.	0Ω	80KΩ	15Ω	80KΩ
3	12SQ7GT	0Ω	7 Meg.	0Ω	0Ω	540KΩ	490KΩ	13Ω	0Ω
4	50L6GT	INF.	87Ω	80KΩ	80KΩ	420KΩ	INF.	36Ω	125Ω
5	35Z5GT	INF.	116Ω	112Ω	INF.	112Ω	INF.	27Ω	80KΩ

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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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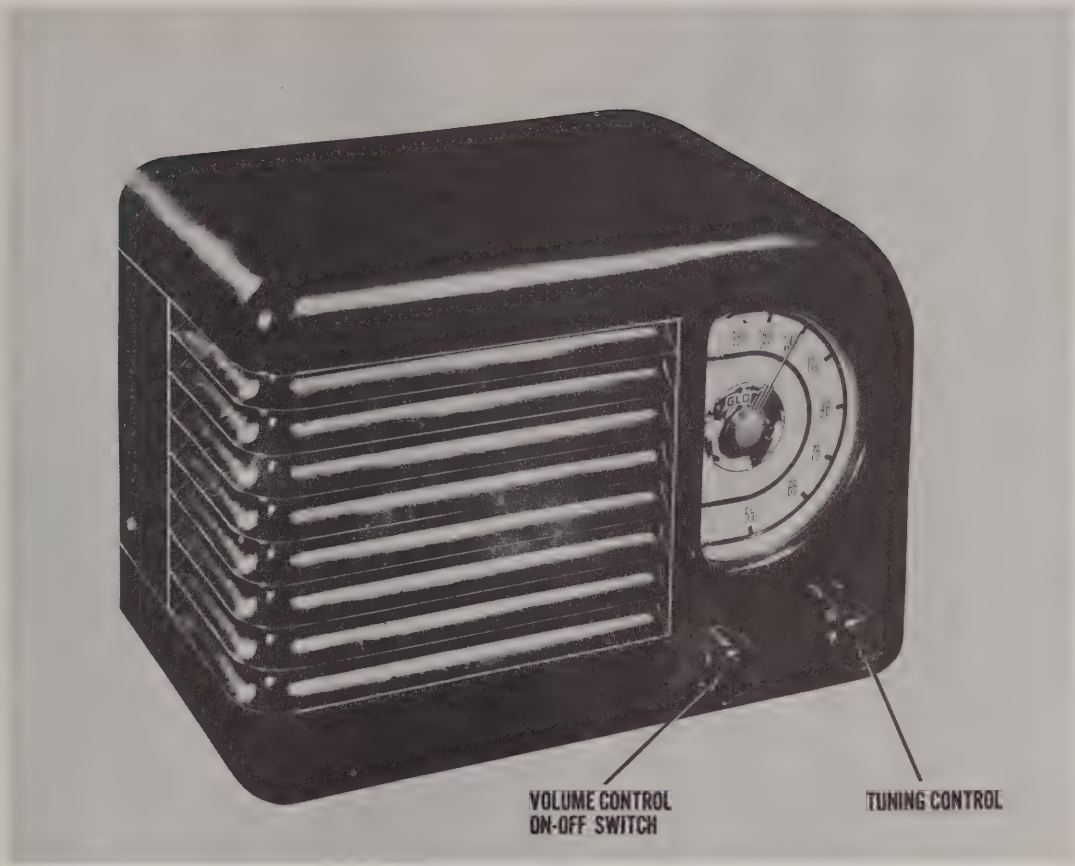
4718-14

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**



GLOBE
MODEL 553

GLOBE
MODEL 553

GLOBE MODEL 553

TRADE NAME	Globe, Model 553
MANUFACTURER	Globe Electronics, Inc., 225 W. 17th St., New York, N.Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	540-1620KC
RATING	.270 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with side of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis. Volume control should be at maximum position output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	200MMFD	High side to ext. ant. lead. Low side to ext. ground lead.	1500KC	1500KC	"	A3	Adjust for maximum output.
3	200MMFD	"	1400KC	Tune for maximum output.	"	A4	" " " "

HOWARD W. SAMS & CO., INC. **Indianapolis, Indiana**

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PARTS LIST AND DESCRIPTIONS

GLOBE MODEL 553

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		GLOBE PART No.	STANDARD REPLACEMENT		
1	Converter		12SA7GT	8AD	
2	IF Amp.		12SK7GT	8N	
3	Det.-AVC-AF		12SQ7GT	8Q	
4	Power Output		50L6GT	7AC	
5	Rectifier		35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	GLOBE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6A	50	150		2N520	DSB-5030-150	TA-530	PRSA150-50-30	BRD3515	Filter - Green
B	30	150							" - Red
7	.02	400		TP423	MPH-6-02	TC-12	484-02	DT4S2	Line Filter
8	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Output Plate Bypass
9	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	"
11	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	IF Screen Bypass
13	200	500		MC237	M0.5-32	1FM-32	1468-0002	5W5T2	AF Plate Bypass
14	200	500		MC237	M0.5-32	1FM-32	1468-0002	5W5T2	Diode RF Filter
15	200	500		MC237	M0.5-32	1FM-32	1468-0002	5W5T2	IF Coupling
16	80	500		MC230	M0.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid

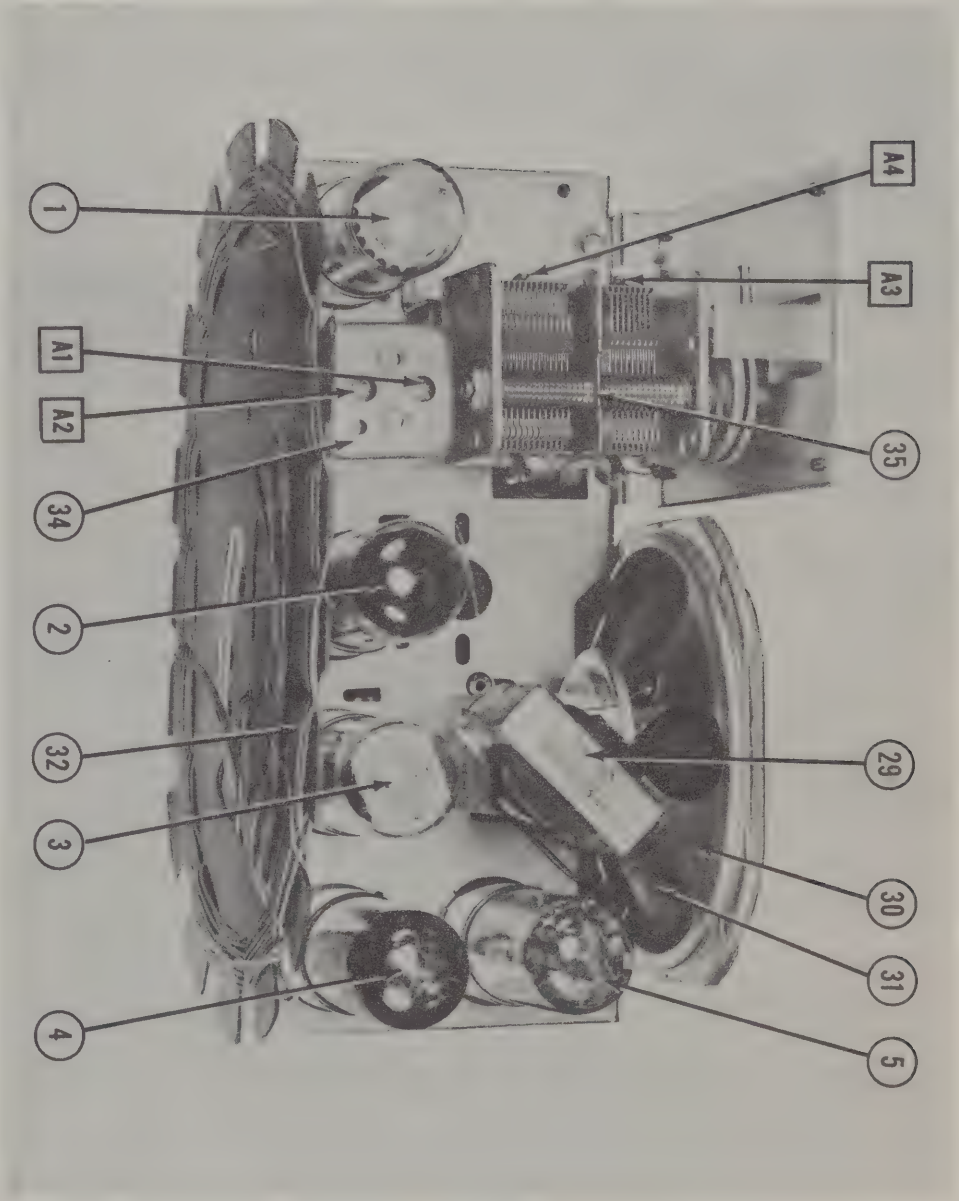
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	GLOBE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
17A	2.5 Meg.	½		MR55	D13-139	M-66-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 17A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	GLOBE PART No.	IRC PART No.	
18	27KΩ	½		BTS-27K	Red-Vi.-Or. Oscillator Grid
19	47KΩ	1		BTA-47K	Yl.-Vi.-Or. IF Screen Dropping
20	15KΩ	½		BTS-15K	Br.-Grn.-Or. IF Plate Load
21	6.8 Meg.	½		BTS-6.8 Meg.	Blue-Gray-Grn. AVC Network
22	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Diode Load
23	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode RF Filter
24	6.8 Meg.	½		BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
25	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
26	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
27	120Ω	1		BW-1-120	Br.-Red-Br. Output Cathode
28	1200Ω	1		BTA-1200	Br.-Red-Red Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GLOBE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
29	21000Ω	3.0Ω	160Ω	.6Ω	Part of 5867	A-3876*	T22S45*	A-2928*	*Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

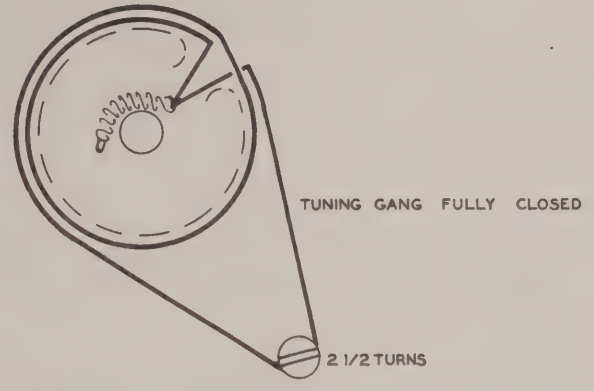
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GLOBE PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-105		
30	PM	3.0Ω	5867	Mod. P5-X		
	CONE DIA.	VC DIA.				
31	4-5/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	GLOBE PART No.	MEISSNER PART No.	
32	Loop Ant.	.1Ω	1.5Ω			
33	Osc. Coil		7Ω		14-1040	
34	Input IF	16Ω	16Ω		16-6658	

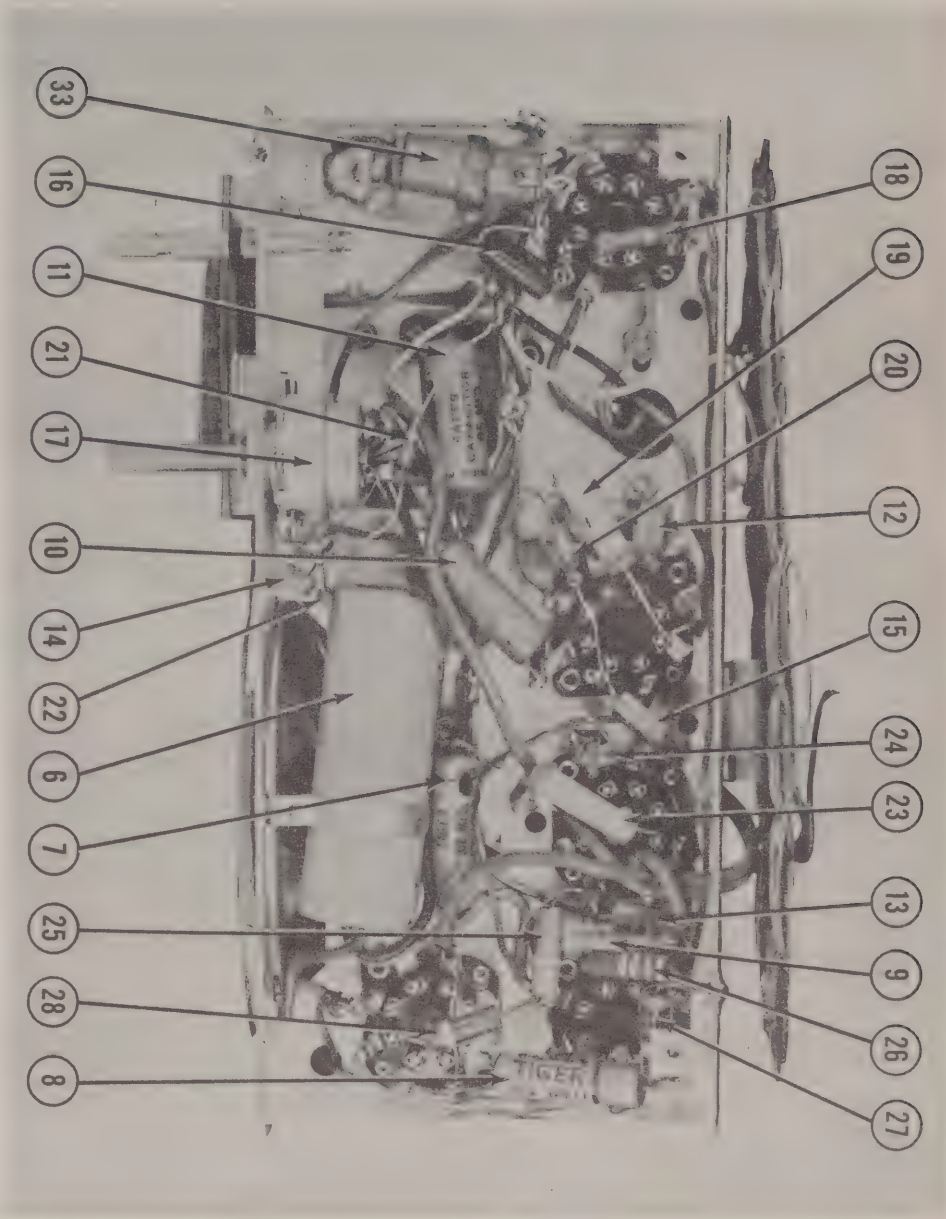
MISCELLANEOUS

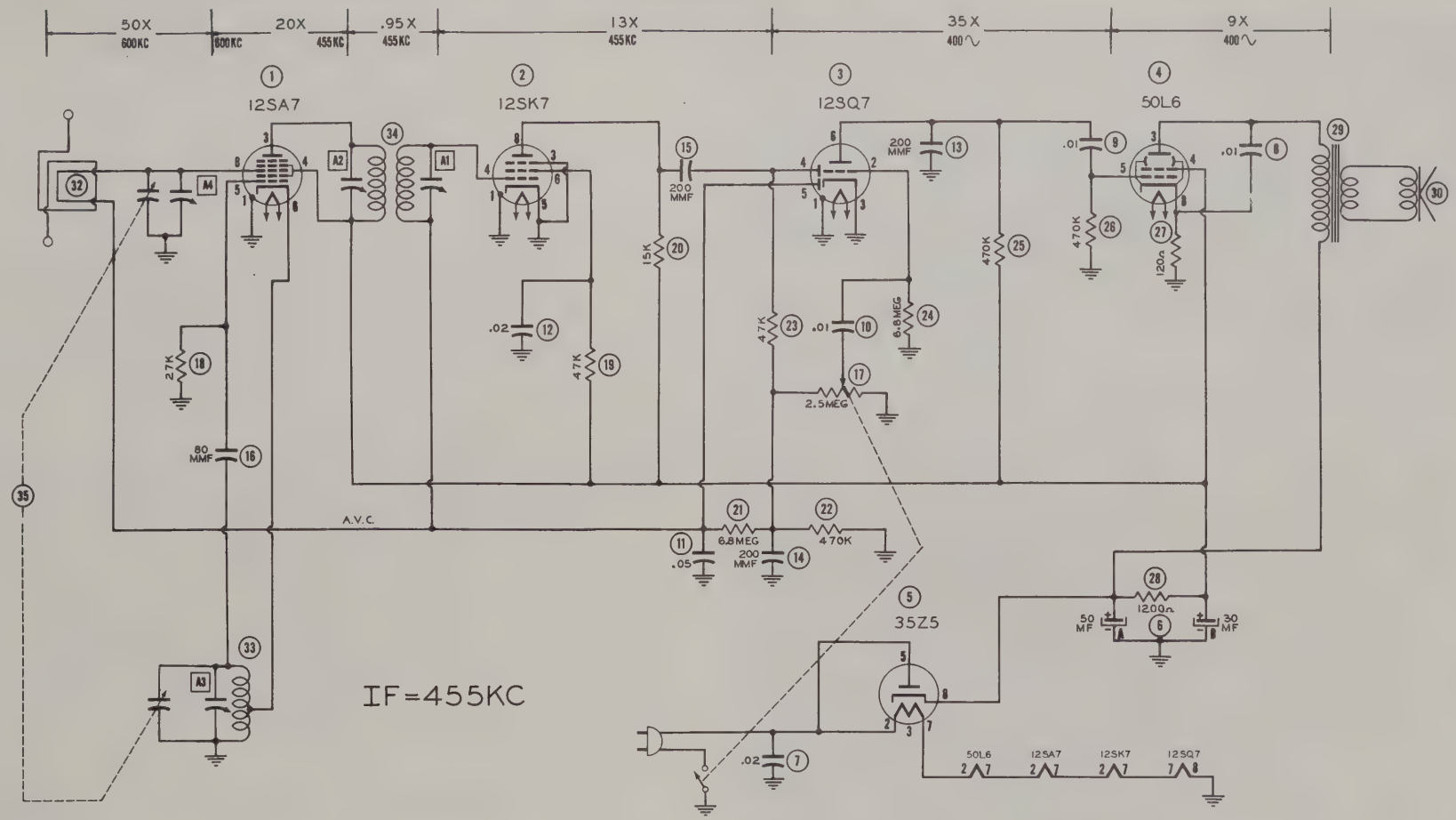
ITEM No.	PART NAME	GLOBE PART No.	NOTES
35	2 Gang Var.Cap.		22-430MMF, 30-179MMF



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	34VAC	103VDC	103VDC	8.7VDC§	0V.	22VAC	-.6VDC
2	12SK7GT	0V.	22VAC	0V.	-.7VDC	0V.	50VDC	11VAC	50VDC
3	12SQ7GT	0V.	-.5VDC	0V.	-.4VDC	-.6VDC	60VDC	11VAC	0V.
4	50L6GT	0V.	80VAC	122VDC	103VDC	0V.	0V.	34VAC	6.2VDC
5	35Z5GT	0V.	117VAC	110VAC	0V.	117VAC	0V.	80VAC	130VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4.	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0Ω	38Ω	80KΩ	80KΩ	27KΩ	.4Ω	25Ω	7 Meg.
2	12SK7GT	0Ω	25Ω	0Ω	7 Meg.	0Ω	130KΩ	12Ω	95KΩ
3	12SQ7GT	0Ω	7 Meg.	0Ω	440KΩ	7 Meg.	550KΩ	12Ω	0Ω
4	50L6GT	INF.	82Ω	80KΩ	80KΩ	480KΩ	INF.	38Ω	120Ω
5	35Z5GT	INF.	115Ω	110Ω	INF.	115Ω	INF.	82Ω	80KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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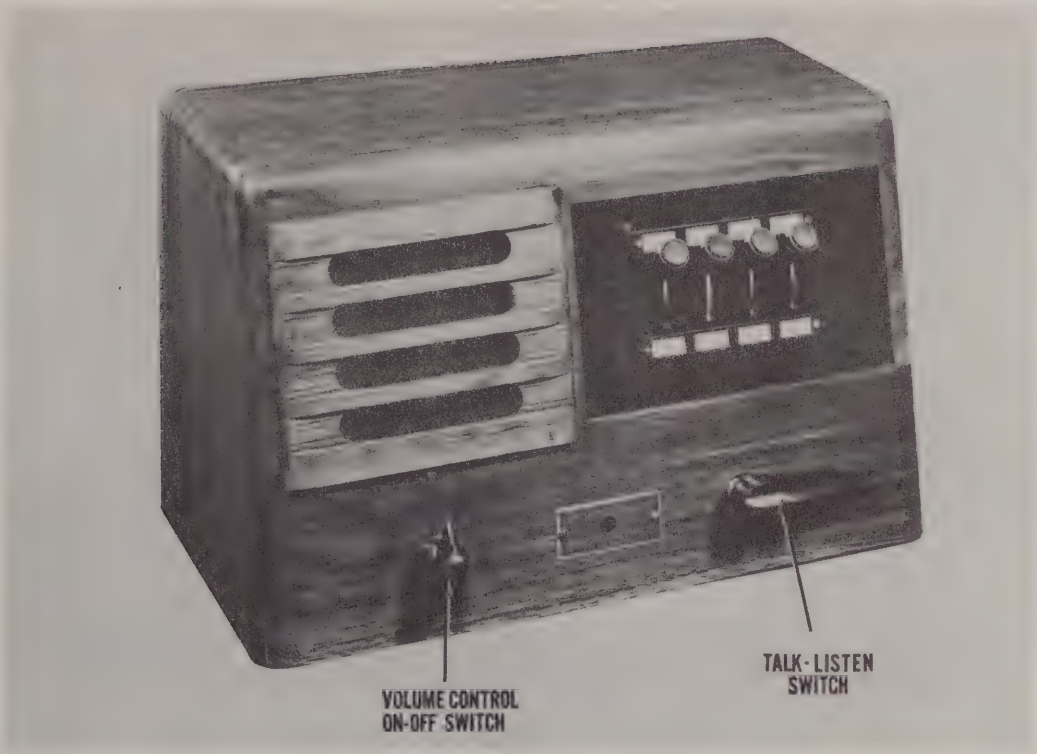
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



GODFREY MODEL 6AD

TRADE NAME	Godfrey, Model 6AD
MANUFACTURER	Godfrey Mfg. Co., Milwaukee, Wis.
TYPE SET	AC-DC Operated Inter-Communication System
TUBES (THREE)	Types, 6SJ7GT AF Amp., 25L6GT Power Output, 25Z6GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC RATING .380 Amp. @ 117 Volts AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SJ7GT	0V.	6VAC	1.4VDC	0V.	1.4VDC	30VDC	0V.	50VDC
2	25L6GT	0V.	31VAC	110VDC	117VDC	0V.	117VDC	6VAC	8.3VDC
3	25Z6GT	0V.	56VAC	117VAC	133VDC	117VAC	0V.	31VAC	133VDC
4	BALLAST	0V.	0V.	56VAC	56VAC	0V.	0V.	117VAC	113VAC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SJ7GT	0Ω	3Ω	3KΩ	1KΩ	3KΩ	1 Meg.	0Ω	330KΩ
2	25L6GT	INF.	14Ω	80KΩ	80KΩ	500KΩ	80KΩ	3Ω	160Ω
3	25Z6GT	INF.	26Ω	230Ω	80KΩ	230Ω	INF.	14Ω	80KΩ
4	BALLAST	INF.	INF.	26Ω	26Ω	0Ω	INF.	230Ω	225Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

GODFREY MODEL 'XAD

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: GODFREY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Amp.	6SJ7GT	6SJ7GT	8N	
2	Power Output	25L6GT	25L6GT	7AC	
3	Rectifier	25Z6GT	25Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GODFREY PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4A	20	150		2N509	DSB-2x20-150	TA-220	PRSA-150-20-20	EZ2215	Filter - Red
B	20	150							" - "
5	10	25		TC22	M-10-25	TA-10	PRS-25-10	ER102A	Output Cathode Bypass
6	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	Output Plate Bypass
7	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
8	.1	400		TP428	S-4-1	TC-1	434-.1	DT4P1	Audio Screen Bypass
9	.1	400		TP428	S-4-1	TC-1	434-.1	DT4P1	Audio Cathode
10	.1	400		TP428	S-4-1	TC-1	434-.1	DT4P1	Line Isolation
11	.1	400		TP428	S-4-1	TC-1	434-.1	DT4P1	Earphone Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GODFREY PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
12A	500KΩ	½		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 12A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GODFREY PART No.	IRC PART No.	IDENTIFICATION CODES
13	3000Ω	½		BTS-3300	Or.-Blk.-Red AF Cathode
14	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AF Screen Dropping.
15	250KΩ	½		BTS-270K	Red-Grn.-Yl. AF Plate Load
16	10KΩ	½		BTS-10K	Br.-Blk.-Or. Volume Control Shunt
17	160Ω	1		BW-1-150	Br.-Blue-Br. Output Cathode
18	100Ω	½		BW-½-100	Br.-Blk.-Br. Output Transformer Shunt
19	200Ω	½		BW-½-220	Red-Blk.-Br. Input Transformer Shunt

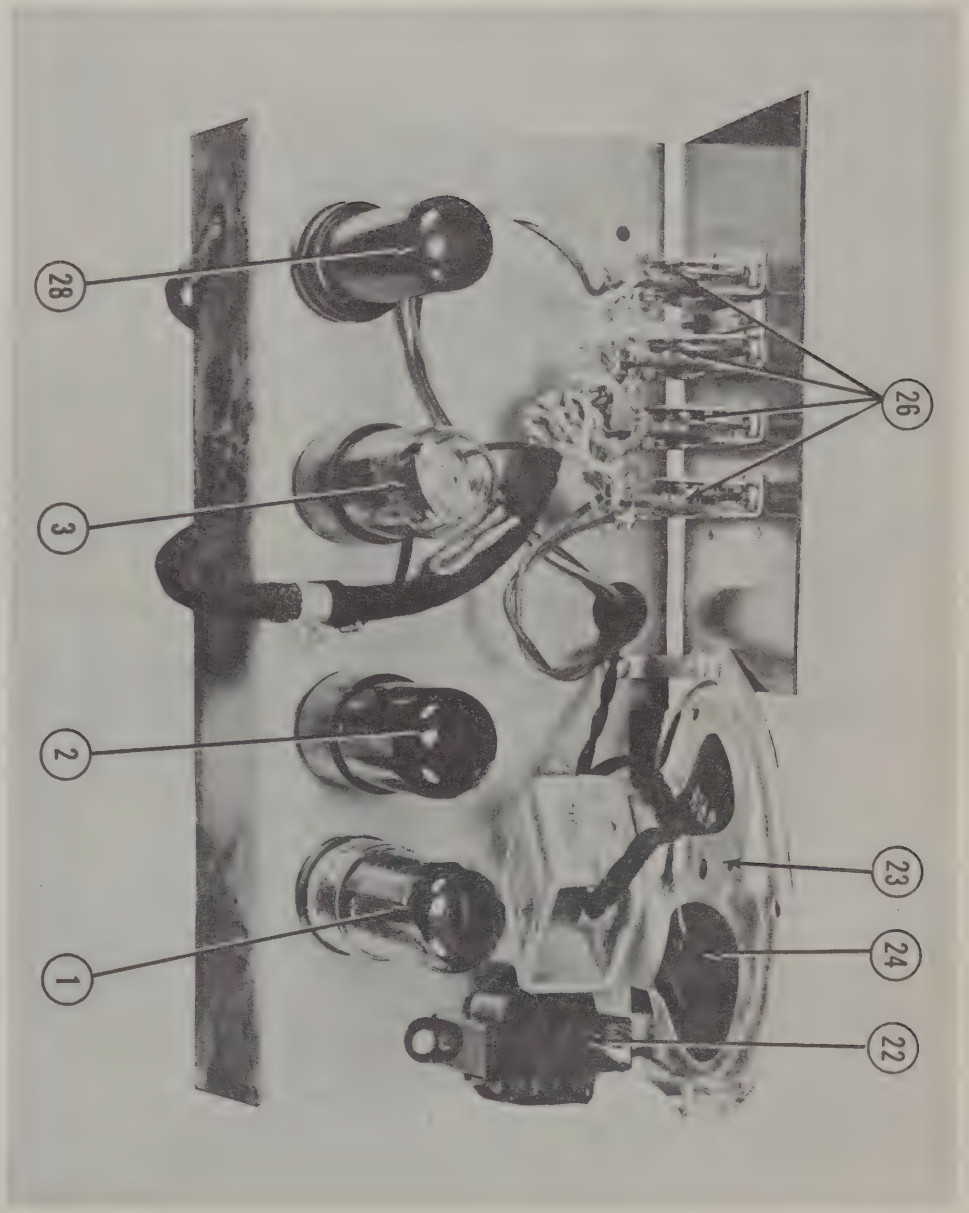
FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000~)	REPLACEMENT DATA: GODFREY PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	INSTALLATION NOTES
20	.05A	310Ω	4 Henries		C-1277	T20C52†	C-2977	†Drill one new mounting hole.

TRANSFORMER (INPUT)

ITEM No.	RATING: TURNS RATIO PRI. to SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: GODFREY PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
21	1 to .20	6.6Ω	100Ω		A-4705	T20A01*	A-2919*	*Drill new mounting holes.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GODFREY PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
22	2100Ω	53Ω	140Ω	6.6Ω					

SPEAKER

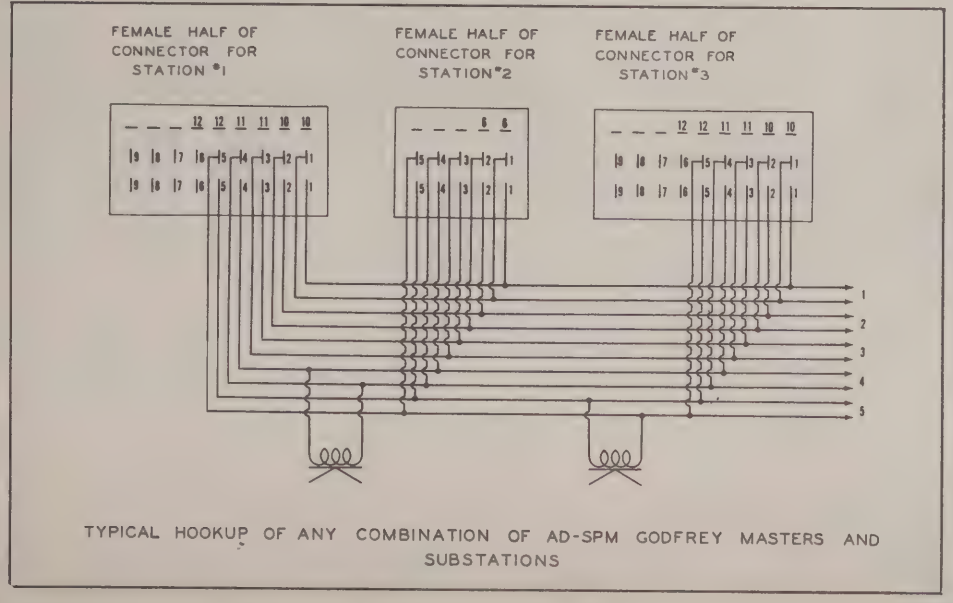
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GODFREY PART No.	JENSEN PART No.		
23	FIELD	VC IMP.		ST-740 Mod. P5-X		
	PM	53Ω				
24	CONE DIA. $4\frac{1}{2}$"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					GODFREY PART No.		
25	Bayonet	6-8	0.15	Blue			Type 47

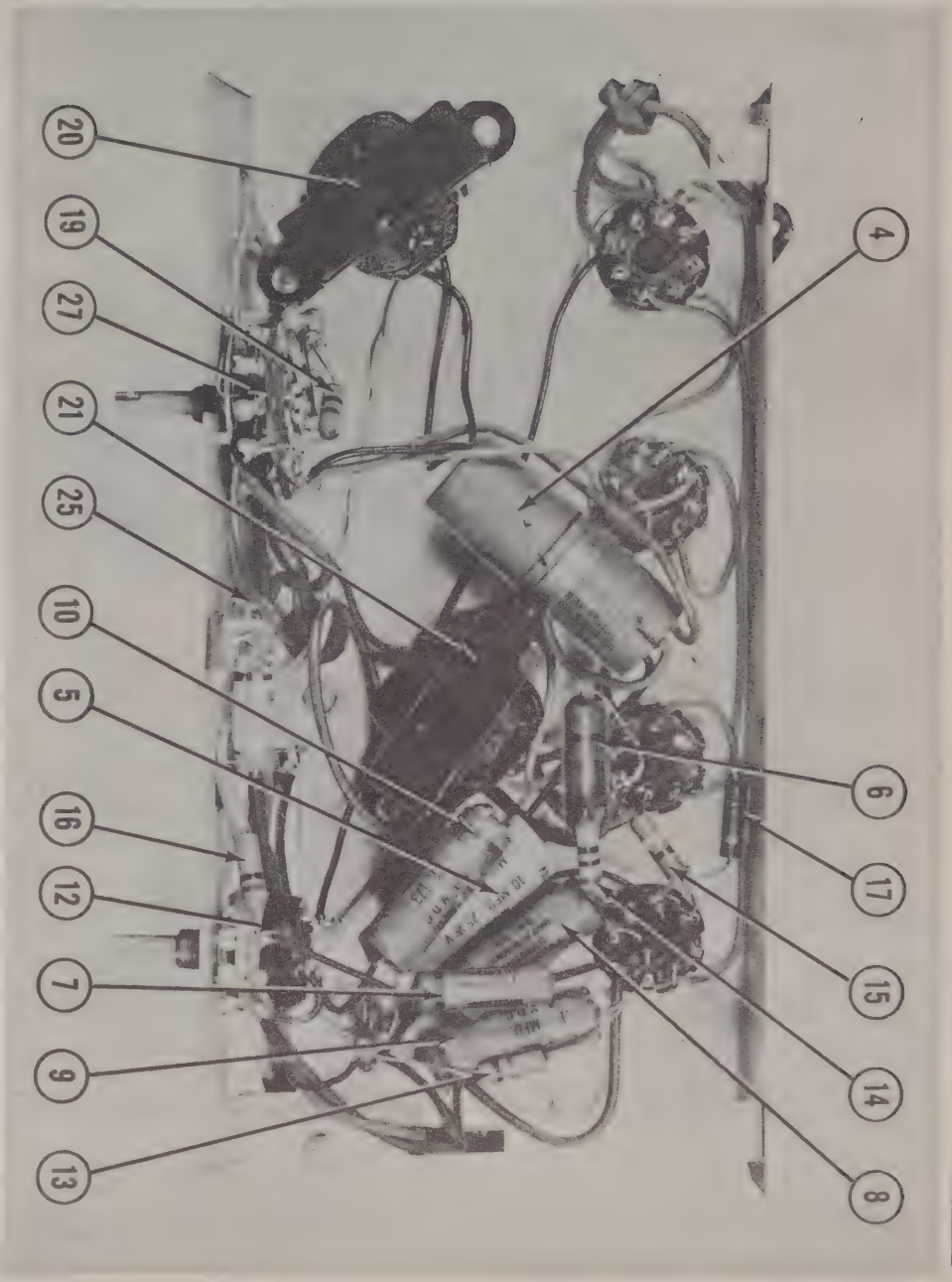
MISCELLANEOUS

ITEM No.	PART NAME	GODFREY PART No.	NOTES
26	Switch		Station Talk-Listen #K67BJ
27	"		
28	Ballast Tube		

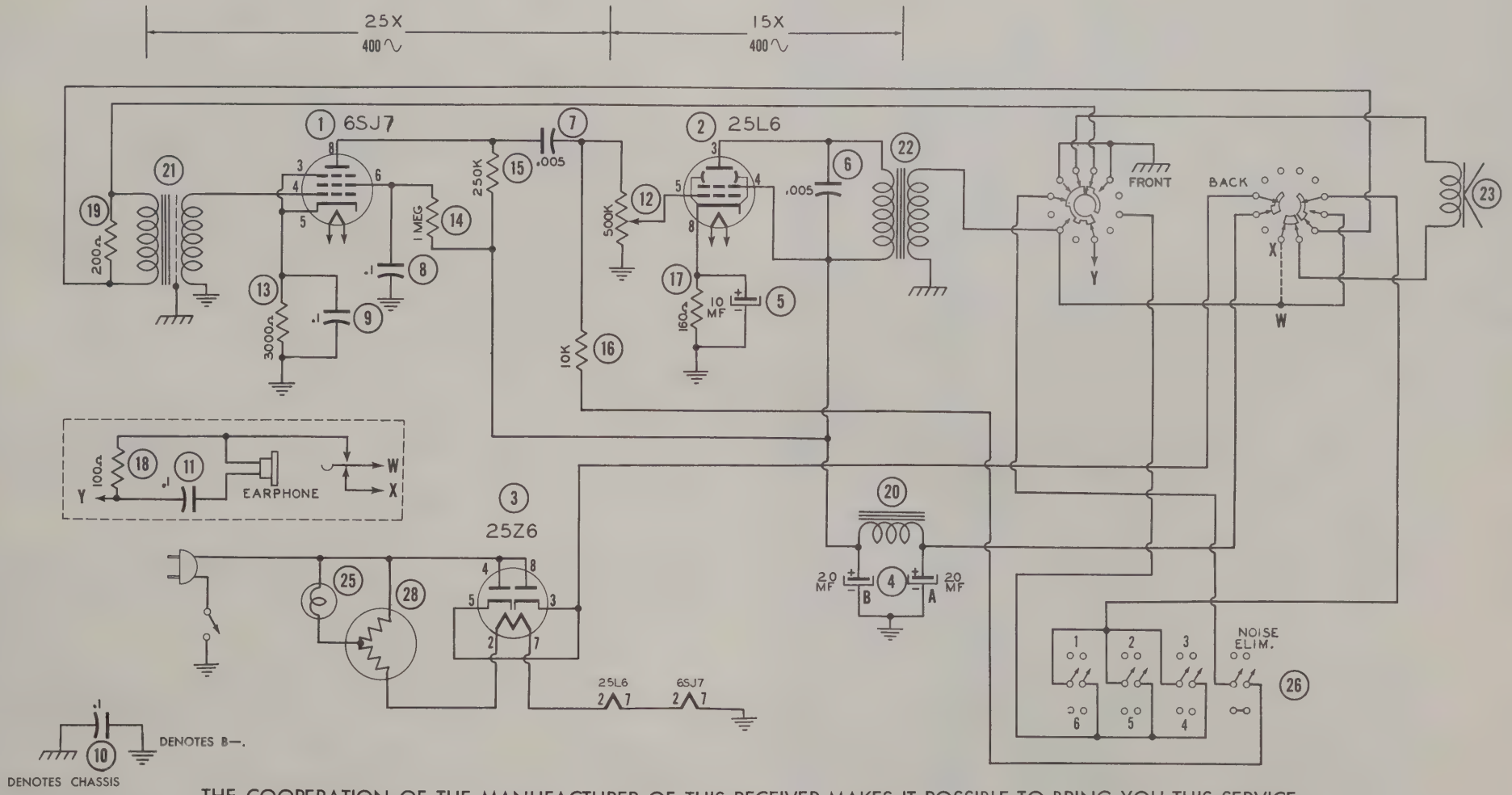


TYPICAL HOOKUP OF ANY COMBINATION OF AD-SPM GODFREY MASTERS AND SUBSTATIONS

CHASSIS—BOTTOM VIEW



DATE 11/47 SET #28 FOLDER #4718-16
GODFREY MODEL 6AD
GODFREY MODEL 6AD



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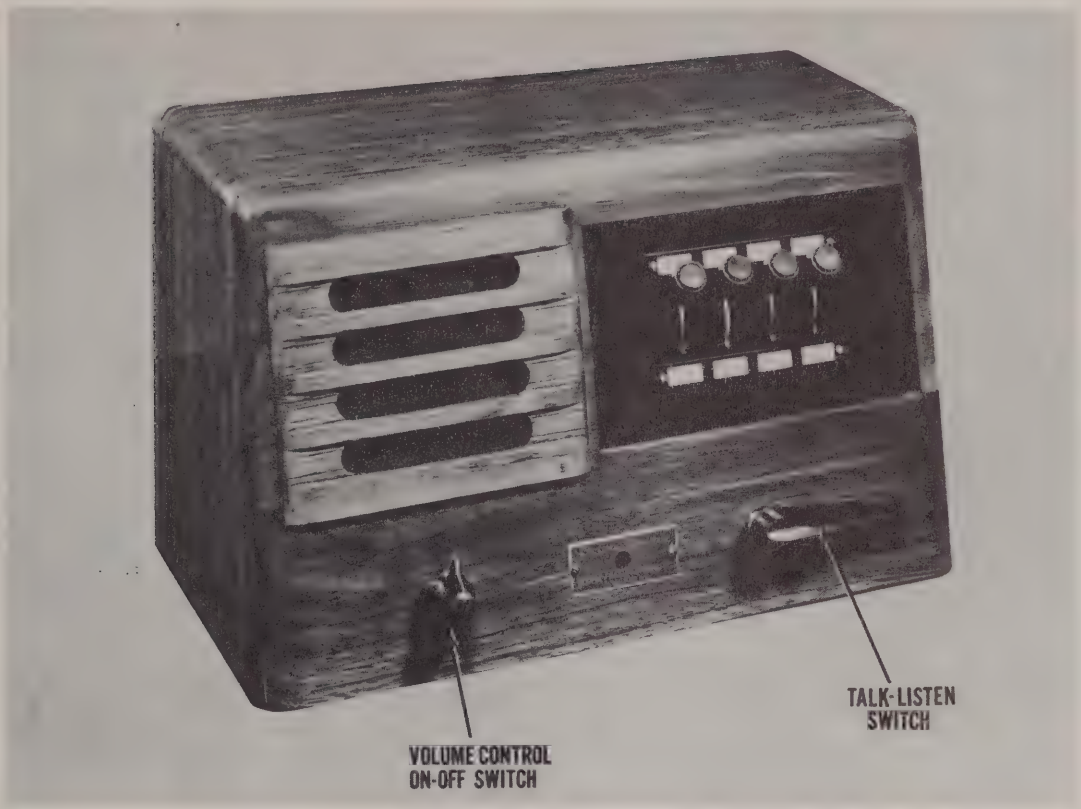
4718-16

GODFREY
MODEL 6SM



GODFREY
MODEL 6SM

GODFREY MODEL 6SM

TRADE NAME	Godfrey, Model 6SM
MANUFACTURER	Godfrey Mfg. Co., Milwaukee, Wis.
TYPE SET	AC Operated Inter-Communication System
TUBES (THREE)	Types, 6SJ7GT Audio Amp., 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .200 Amp. @ 117 Volts AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SJ7GT	0V.	3.2VAC	1.1VDC	0V.	1.1VDC	25VDC	3.2VAC	49VDC
2	6V6GT	0V.	3.2VAC	250VDC	260VDC	0V.	260VDC	3.2VAC	15VDC
3	5Y3GT	0V.	270VDC	0V.	250VAC	0V.	250VAC	0V.	270VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SJ7GT	0Ω	.2Ω	1KΩ	3KΩ	1KΩ	1.1 Meg.	.2Ω	350KΩ
2	6V6GT	INF.	.2Ω	90KΩ	90KΩ	500KΩ	90KΩ	.2Ω	300Ω
3	5Y3GT	INF.	90KΩ	INF.	250Ω	INF.	260Ω	INF.	90KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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DATE 11/47 SET #28 FOLDER #4718-17

PARTS LIST AND DESCRIPTIONS

GODFREY MODEL 6SM

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		GODFREY PART No.	STANDARD REPLACEMENT		
1	AF Amp.	6SJ7GT	6SJ7GT	8N	
2	Power Output	6V6GT	6V6GT	7AC	
3	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	GODFREY PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
4A	8	475		2N518	DH-2x8-450	UT-88	PRSA450-8-8	EZ8045	Filter - Red
B	8	475							" "
5	10	25		TC22	M-10-25	TA-10	PRS25-10	BR102A	Cathode Bypass
6	.1	400		TP428	MPH-4-1	TC-1	484-.1	DT4P1	Line Filter
7	.005	600		TP409	S-6-005	TC-25	684-005	DT6D5	Output Plate Bypass
8	.005	600		TP409	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
9	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	AF Cathode Bypass
10	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	AF Cathode Bypass
11	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	Earphone Coupling

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	GODFREY PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
12A	500KΩ	½		MR48	D13-133	M-60-2	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 12A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	GODFREY PART No.	IRC PART No.	
13	200Ω	½		BTS-220	Red-Blk.-Br. Input Transformer Shunt
14	1000Ω	½		BTS-1000	Br.-Blk.-Red AF Cathode
15	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AF Screen Dropping
16	250KΩ	½		BTS-270K	Red-Grn.-Yl. AF Plate Load
17	10KΩ	½		BTS-10K	Br.-Blk.-Or. Volume Control Shunt
18	300Ω	1		BW-1-330	Or.-Blk.-Br. Output Cathode
19	100Ω	½		BW-½-100	Br.-Blk.-Br. Output Transformer Shunt

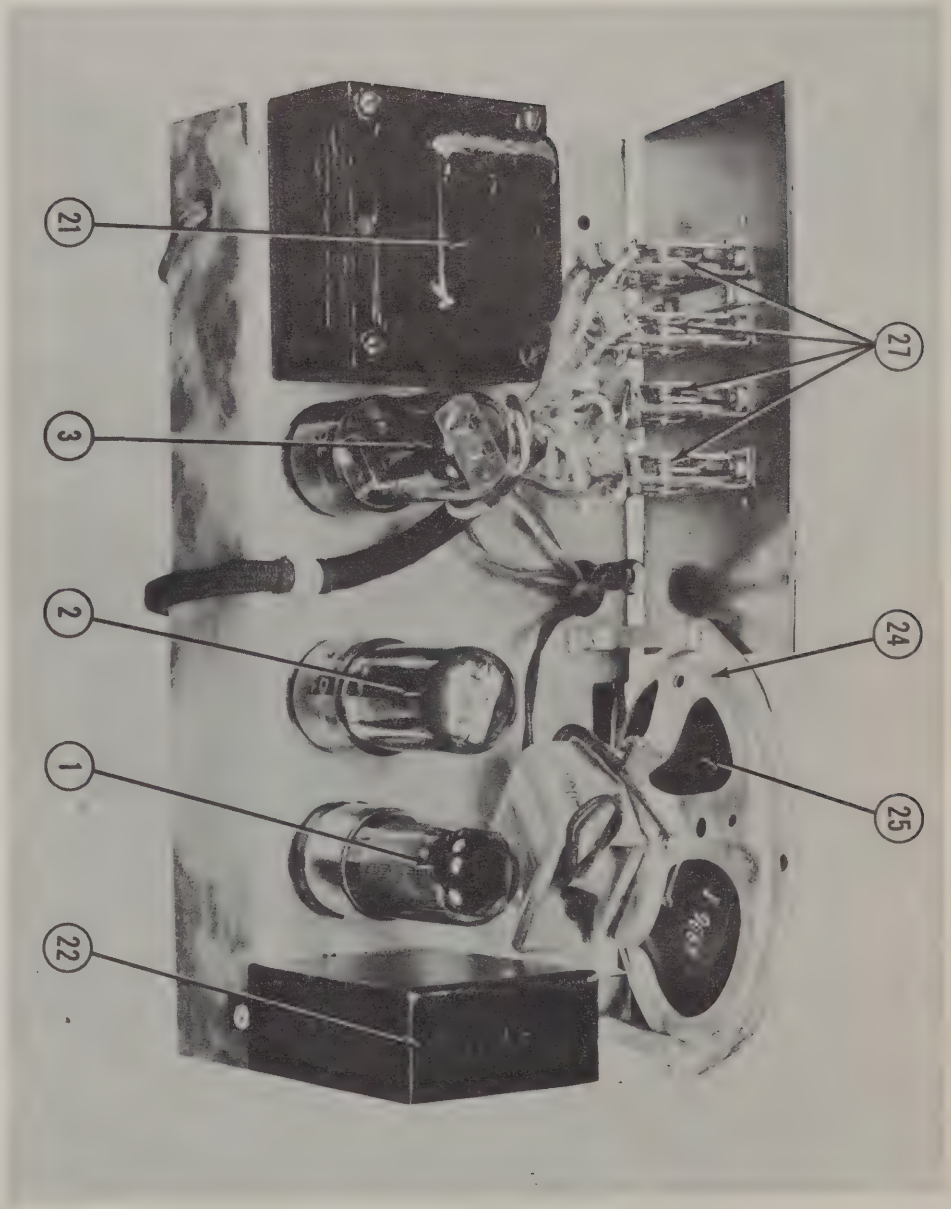
FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	GODFREY PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	
20	.045A	310Ω	4 Henries		C-1277	T20C52*	C-2977	*Drill one new mounting hole.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	GODFREY PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
21	117V AC @ .2A	500V CT @ .045A	5.0V AC @ 2.0A	6.3V AC @ 0.9A		P-6297	T22R00	P-2949

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (INPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	TURNS RATIO		DC RES.		GODFREY PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI. to SEC.		PRI.	SEC.					
22	1 to 12		6.7Ω	2900Ω		A-4708†	T20A00†	A-2924†	†Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GODFREY PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
23	5000Ω	53Ω	250Ω	6.4Ω				A-2904§	§Connect one-half of primary and taps 1 & 6 on secondary.

SPEAKER

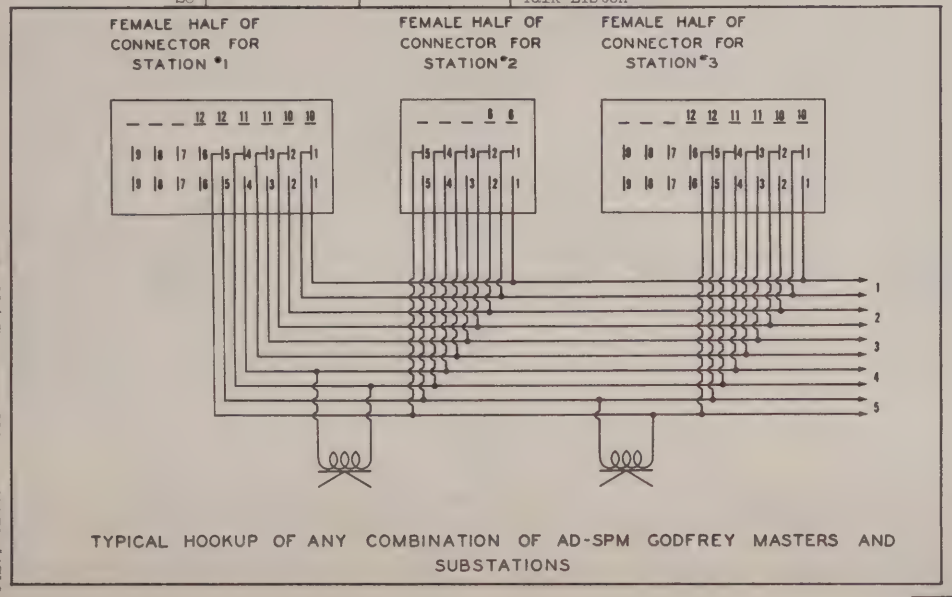
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GODFREY PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-740		
24	PM	53Ω		Mod. P5-X		
	CONE DIA.	VC DIA.				
25	4½"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					GODFREY PART No.		
26	Bayonet	6-8	0.25	Blue			Type 44

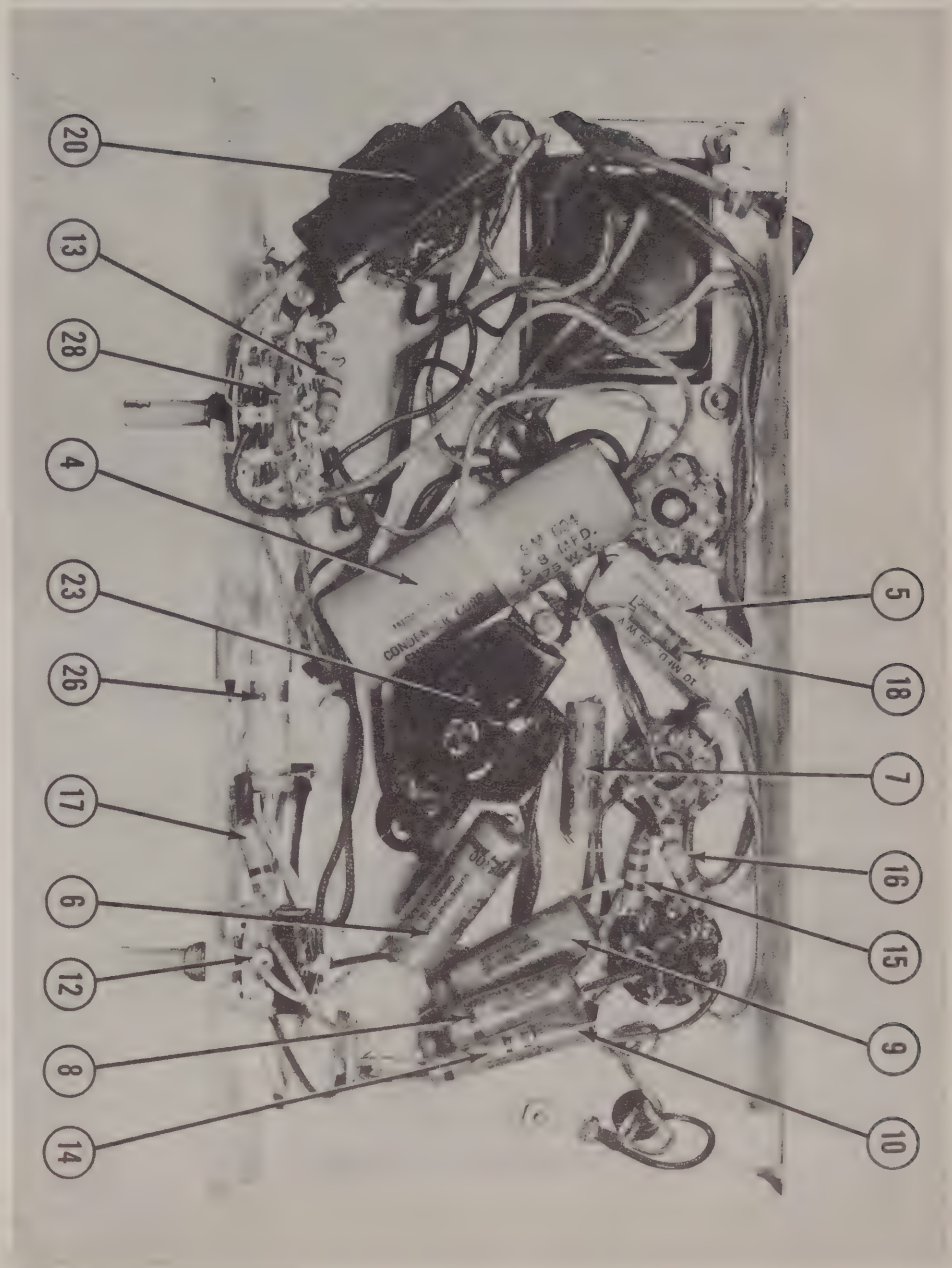
MISCELLANEOUS

ITEM No.	PART NAME	GODFREY PART No.	NOTES
27	Switch		Station Selector
28	"		Talk-Listen

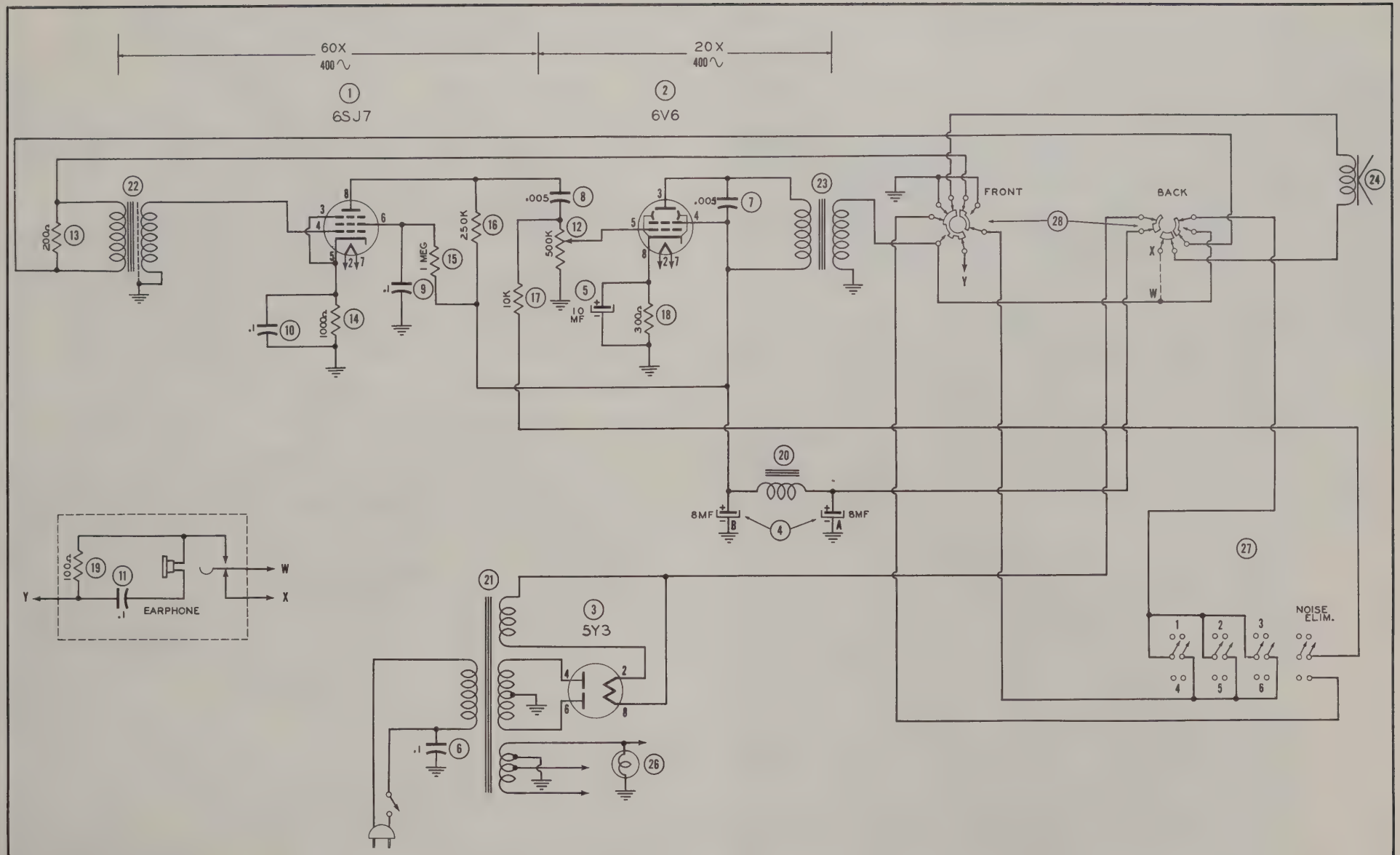


TYPICAL HOOKUP OF ANY COMBINATION OF AD-SPM GODFREY MASTERS AND SUBSTATIONS

CHASSIS—BOTTOM VIEW



GODFREY MODEL 6SM



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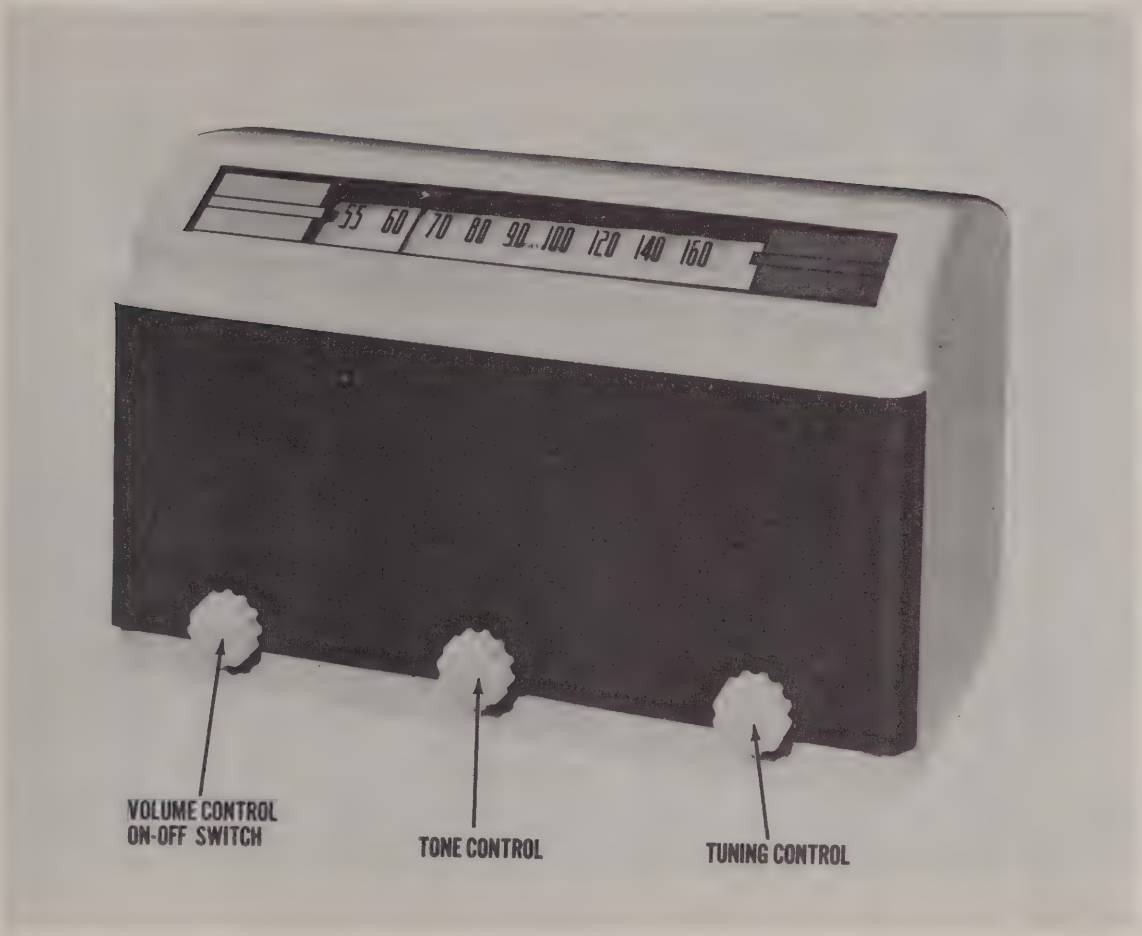
4718-17

LAFAYETTE
MODEL MC11



LAFAYETTE
MODEL MC11

LAFAYETTE MODEL MC11

TRADE NAME	Lafayette, Model MC11
SUPPLIER	Radio Wire Television Inc., 100 Ave. of the Americas, New York, N.Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types, 12BA6 RF Amp., 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier or Lock-In or Octal Equivalents
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	540-1700KC RATING .250 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis. Volume control should be at maximum position output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to large stator of tuning cap. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	200MMFD	High side to ext. ant. lead. Low side to ext. ground lead.	1700KC	"	"	A5	Adjust for maximum output. The trimmer opposite A5 is a factory adjustment and it should not be necessary to change its setting.
3	200MMFD	"	1500KC	Tune for maximum output.	"	A6	Adjust for maximum output.

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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DATE 11/47 SET #28 FOLDER #4718-18

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: LAFAYETTE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1A	RF Amp.	12BA6	12BA6	7BK	
B	" "	14A7	14A7	8V	
C	" "	12SK7	12SK7	8N	
2A	Converter	12BE6	12BE6	7CH	
B	"	14Q7	14Q7	8AL	
C	"	12SA7	12SA7	8R	
3A	IF Amp.	12BA6	12BA6	7BK	
B	" "	14A7	14A7	8V	
C	" "	12SK7	12SK7	8N	
4A	Det.-AVC-AF	12AT6	12AT6	7BT	
B	"	14B6	14B6	8W	
C	"	12SQ7	12SQ7	8Q	
5A	Power Output	50B5	50B5	7BZ	
B	" "	35A5	35A5	6AA	
C	" "	35L6	35L6	7AC	
6A	Rectifier	35W4	35W4	5BQ	
B	"	35Y4	35Y4	5AL	
C	"	35Z5	35Z5	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: LAFAYETTE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	50	150	CL-10007	2N520	DSB-5030-150	TA-530	PRSA-150-30-50	EZ5515	Filter - Green
B	30	150							" - Red
8	.01	400	CP-14103	TP421	S-4-01	TC-11	484-01	DT4S1	Output Plate Bypass
9	.01	400	CP-14103	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.01	400	CP-14103	TP421	S-4-01	TC-11	484-01	DT4S1	" "
11	.05	200	CP-12503	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	.05	400	CP-14503	TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
13	.003	600	CP-14302	TP406	S-6-003	TC-23	684-003	DT6D3	Tone Compensation
14	250	500	CM-15251	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Audio Grid Bypass Cer.
15	250	500	CM-15251	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Diode RF Filter
16	250	500	CM-15251	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	RF Coupling
17	250	500	CM-15251	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Converter Grid Bypass§
18	50	500	CM-15500	MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Oscillator Grid

§Not used in all models.

CONTROLS

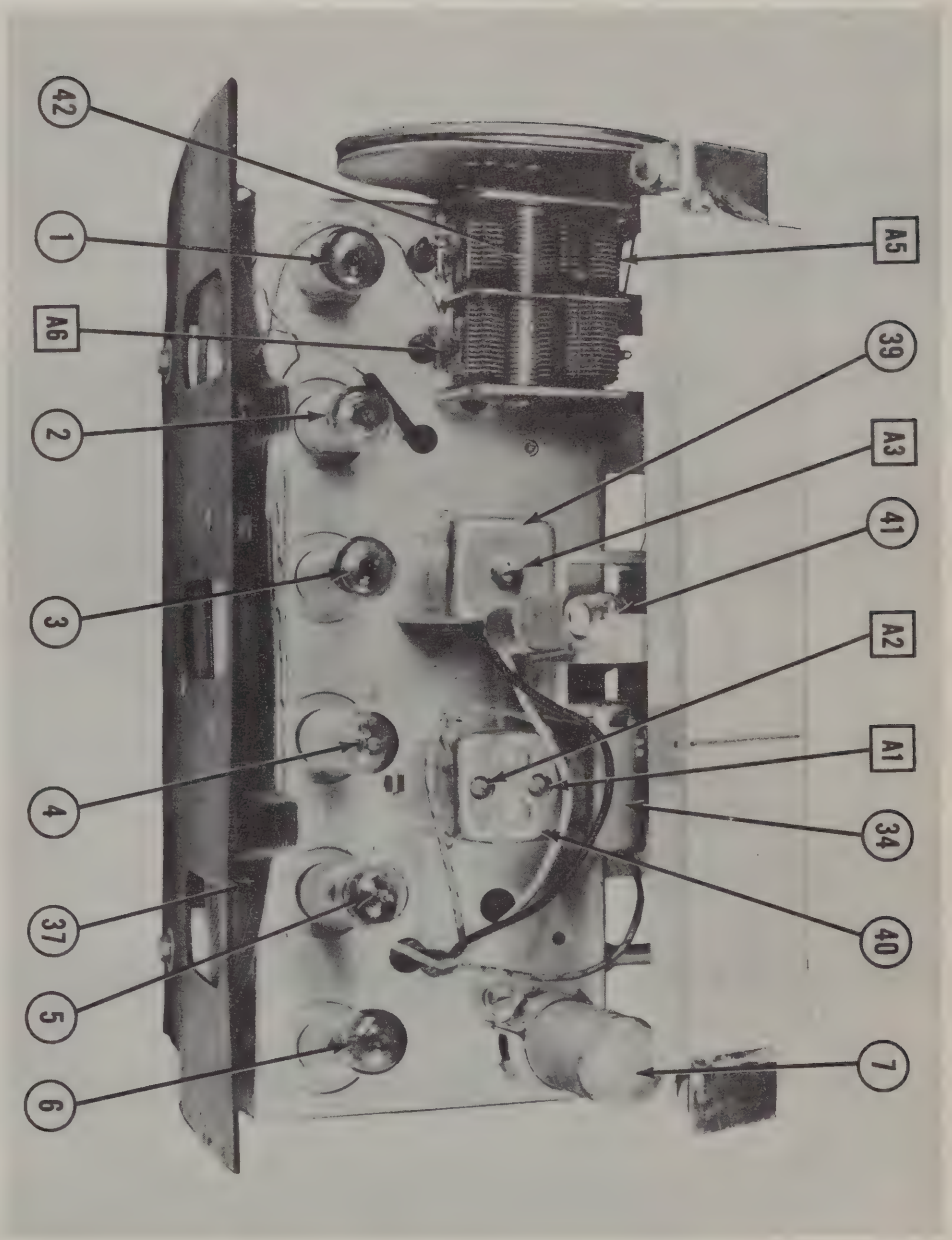
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LAFAYETTE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
19A	1 Meg.	½	VC11105	MR53	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 19A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
20A	1 Meg.	½	VC13105	MR53	D13-137	M-63-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 20A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LAFAYETTE PART No.	IRC PART No.	IDENTIFICATION CODES
21	150Ω	½	RC-31500	BW-½-150	Br.-Grn.-Br. RF Cathode
22	5000Ω	½	RC-35001	BTS-4700	Grn.-Blk.-Red RF Plate Load
23	500KΩ	½	RC-35003	BTS-470K	Grn.-Blk.-Yl. Converter Grid
24	20KΩ	½	RC-32002	BTS-22K	Red-Blk.-Or. Oscillator Grid
25	2.2 Meg.	½	RC-32004	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
26	100KΩ	½	RC-31003	BTS-100K	Br.-Blk.-Yl. Diode RF Filter
27	10 Meg.	½	RC-31005	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
28	240KΩ	½	RC-32503	BTS-220K	Red-Yl.-Yl. AF Plate Load
29	500KΩ	½	RC-35003	BTS-470K	Grn.-Blk.-Yl. Output Grid
30	150Ω	½	RC-31500	BW-½-150	Br.-Grn.-Br. Output Cathode
31	1000Ω	1	RC-30250	BTA-1000	Br.-Blk.-Red Filter
32	25Ω	½	RC-41001	BW-½-22	Red-Grn.-Blk. Rectifier Ballast
33	150Ω	½	RC-31500	BW-½-150	Br.-Grn.-Br. IF Cathode-See Note

Note-Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		LAFAYETTE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
34	1700Ω	3.8Ω	115Ω	.4Ω	TO-10000	A-3865*	T22845*	A-2928*	*Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			LAFAYETTE PART No.	JENSEN PART No.		
	FIELD	VC IMP.				
35	PM	3.8Ω	SO-10002			
	CONE DIA.	VC DIA.				
36	4"x6"	1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT.		

R F COILS

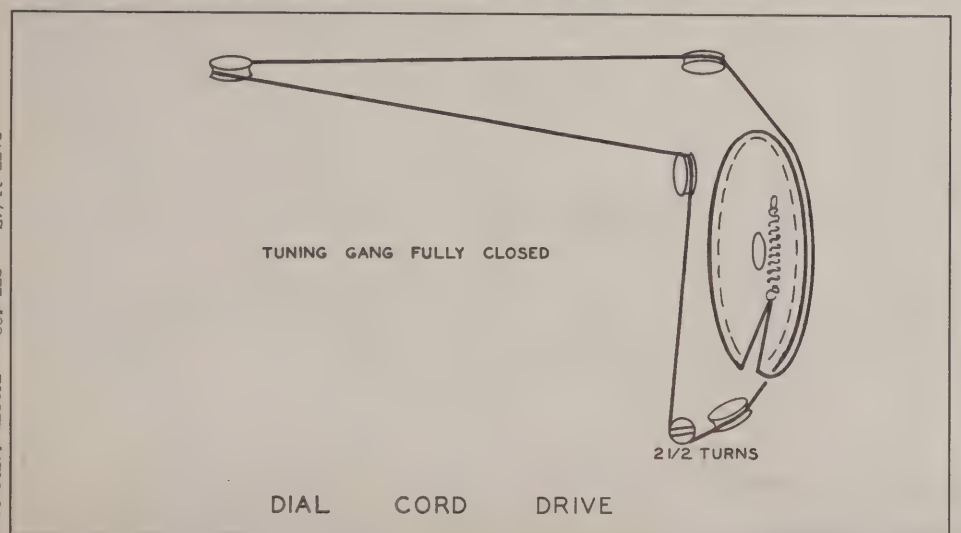
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	LAFAYETTE PART No.	MEISSNER PART No.
37	Loop Ant.	.2Ω	1.5Ω	AL-10010	
38	Osc. Coil		5.5Ω	TRC-10000-D	14-1040
39	Input IF	26Ω	25Ω	TS-10000	16-6666
40	Output IF	19Ω	19Ω	TS-10001	16-6667

DIAL LIGHT

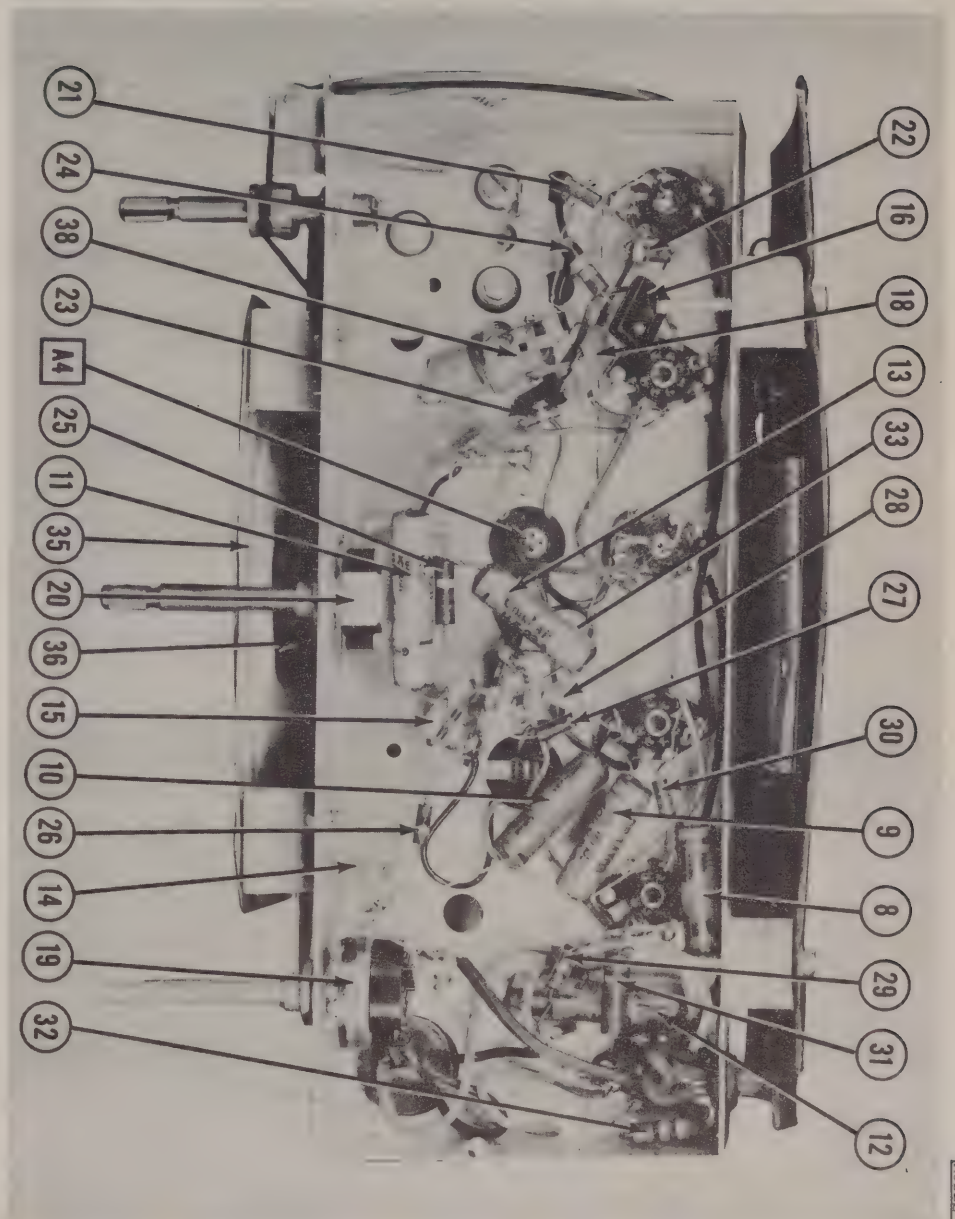
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					LAFAYETTE PART No.		
41	Bayonet	6-8	0.15	Brown			Type 47

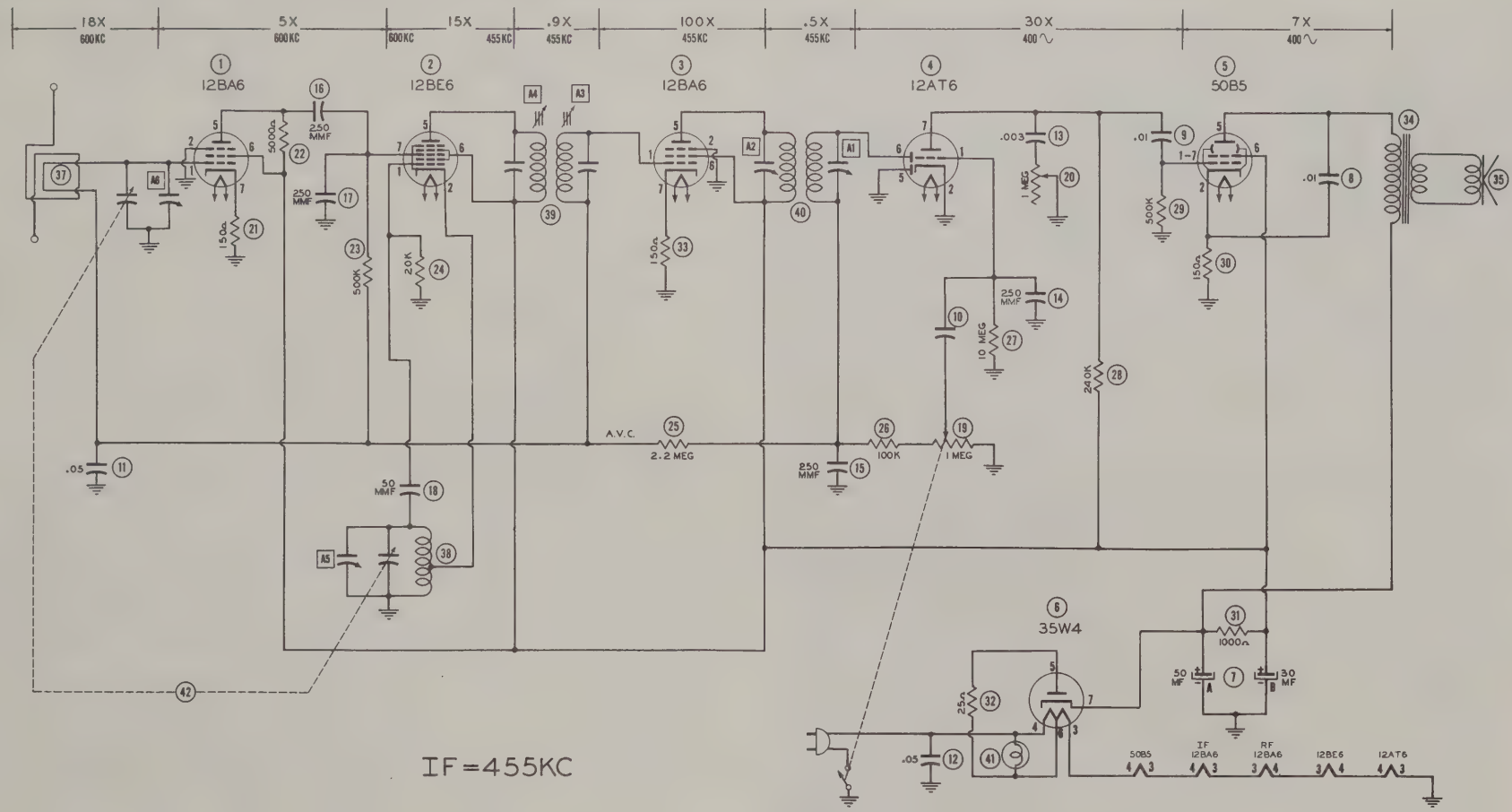
MISCELLANEOUS

ITEM No.	PART NAME	LAFAYETTE PART No.	NOTES
42	2 Gang Var. Cap.	CV-10002-E	25-477 MMF, 30-195MMF



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BA6	-.1VDC	0V.	32VAC	21VAC	53VDC	85VDC	1.2VDC
2	12BE6	-.13VDC§	0V.	21VAC	10VAC	85VDC	85VDC	-.3VDC
3	12BA6	-.1VDC	0V.	32VAC	43VAC	85VDC	85VDC	1.2VDC
4	12AT6	-.5VDC	0V.	0V.	10VAC	0V.	-.5VDC	50VDC
5	50B5	0V.	5.4VDC	43VAC	90VAC	108VDC	85VDC	0V.
6	35W4	0V.	0V.	90VAC	117VAC	112VAC	113VAC	112VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BA6	4 Meg.	0Ω	34Ω	23Ω	55KΩ	50KΩ	150Ω
2	12BE6	20KΩ	.5Ω	23Ω	12Ω	50KΩ	50KΩ	4.5 Meg.
3	12BA6	4 Meg.	0Ω	34Ω	44Ω	50KΩ	50KΩ	150Ω
4	12AT6	10 Meg.	0Ω	0Ω	12Ω	0Ω	1.2 Meg.	300KΩ
5	50B5	500KΩ	150Ω	44Ω	90Ω	50KΩ	50KΩ	500KΩ
6	35W4	INF.	INF.	90Ω	120Ω	140Ω	117Ω	50KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4718-18

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MAJESTIC MODELS
5AK780, 5AK731 (Ch. 5B05A)

MAJESTIC MODELS
5AK780, 5AK731 (Ch. 5B05A)

MAJESTIC MODEL 5AK780

TRADE NAME	Majestic, Models 5AK780, 5AK731 (Ch. 5B05A)
MANUFACTURER	Majestic Radio & Tele. Corp., Elgin, Ill.
TYPE SET	AC Operated Radio - Phono Combination Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	530-1620KC RATING .230 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.05 MFD.	High side to Pin 7 (grid) 12BE6. Low side to B-.	455KC	600KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation.
2		Loop	1500KC	1500KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		"	"	Tune for maximum output.	"	A6	Adjust for maximum output.

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DATE 11/47 SET #28 FOLDER #4718-19

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7BK	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MAJESTIC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	19-25	FP354†	DY-4020-150	EL-24	AF84D4A†	UP4215	■ Filter
B	20	150							▲ "
7	.05	200	5-40	TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
8	.1	200	5-39	TP428	S-4-1	TC-1	484-.1	DT4P1	Line Isolation
9	.05	200	5-40	TP426	S-4-05	TC-15	484-05	DT4S5	Phono Isolation
10	.04	200	5-58	TP425	S-6-04	TC-14	484-04	DT4S4	Output Plate Bypass
11	.01	200	5-57	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
12	.002	200	5-52	TP405	S-6-002	TC-22	484-002	DT6D2	" "
13	.01	400	5-57	TP421	S-4-01	TC-11	484-01	DT4S1	Tone Comp.
14	.05	200	5-40	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
15	220	500	6-151	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Tone Comp.
16	220	500	6-151	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	AF Plate Bypass
17	220	500	6-151	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Diode RF Filter

†Parallel sections to obtain desired capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAJESTIC PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18	500KΩ	½	13-28				Volume Control - Switch

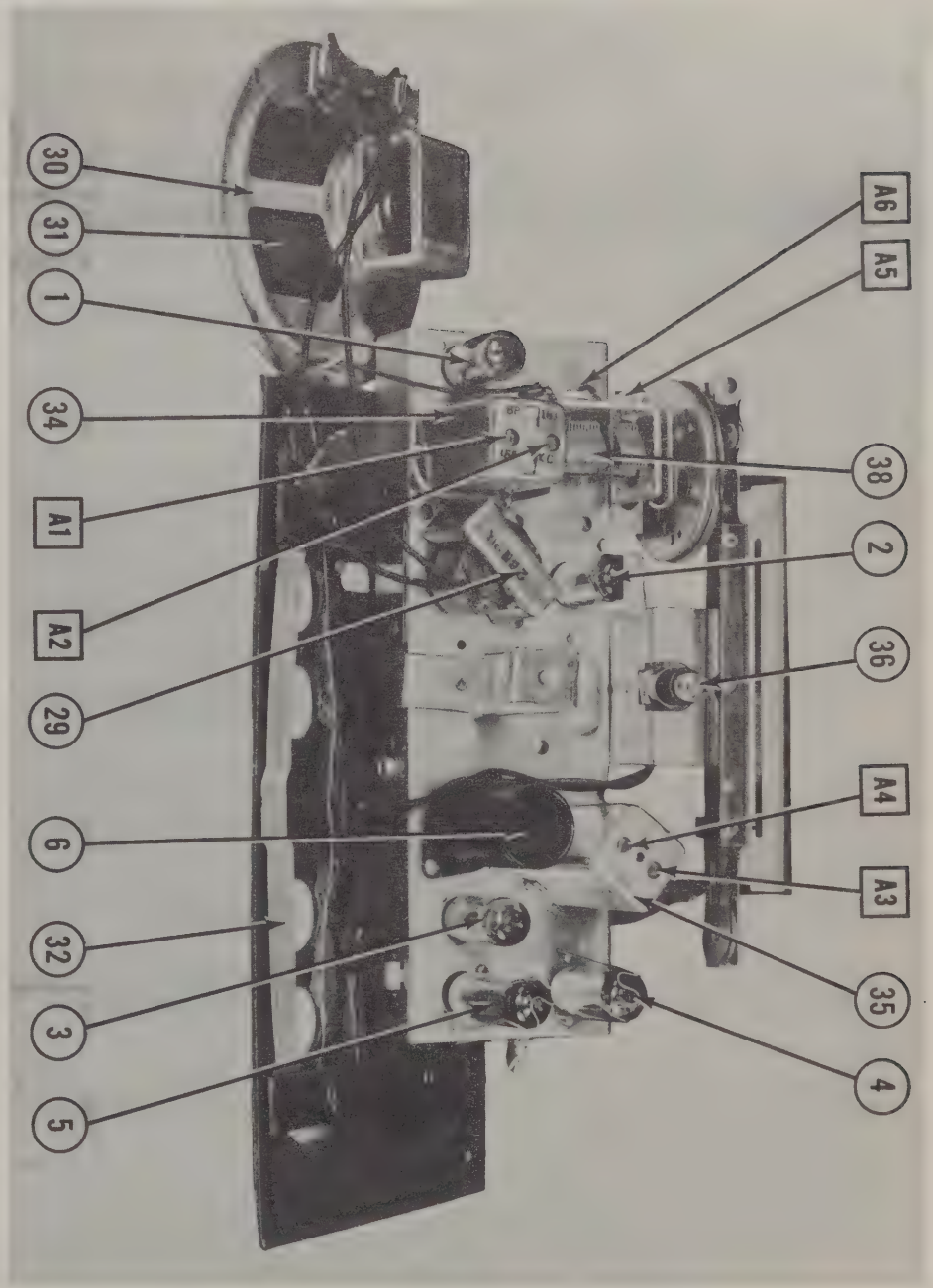
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAJESTIC PART No.	IRC PART No.	IDENTIFICATION CODES
19	22KΩ	½	01-143	BTS-22K	Red-Red-Or. Oscillator Grid
20	3.3 Meg.	½	01-234	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
21	22KΩ	½	01-143	BTS-22K	Red-Red-Or. Diode RF Filter
22	10 Meg.	½	01-255	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
23	330KΩ	½	02-192	BTS-330K	Or.-Or.-Yl. AF Plate Load
24	470KΩ	½	01-199	BTS-470K	Yl.-Vi.-Yl. Output Grid
25	150Ω	1	03-52	BW-1-150	Br.-Grn.-Br. Output Cathode
26	1200Ω	1	03-90	BTA-1200	Br.-Red-Red Filter
27	18KΩ	½	01-139	BTS-18K	Br.-Gray-Or. Tone Compensation
28	27Ω	½	01-20	BW-½-27	Red-Vi.-Blk. Rectifier Ballast

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MAJESTIC PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
29	2000Ω	3.3Ω	220Ω tapped @ 13Ω	.8Ω	2-20	A-3876*		A-2928*	*Add extra filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MAJESTIC PART No.	JENSEN PART No.		
30	FIELD PM	VC IMP. 3.3Ω	22-36	ST-105 Mod. P5-X		
31	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

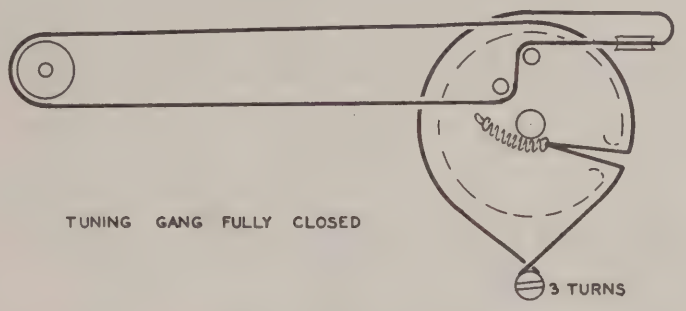
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MAJESTIC PART No.	MEISSNER PART No.	
32	Loop Ant.		1.2Ω	S-1354		
33	Osc. Coil	1.5Ω	5.5Ω	S-1374	14-1040	Add 50MMF from grid to high side tuning cap.
34	Input IF	18Ω	13Ω	3-161	16-6666	
35	Output IF	21Ω	21Ω	3-193	16-6667	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MAJESTIC PART No.		
36	Bayonet	6-8	0.15	Brown	26-2		Type 47

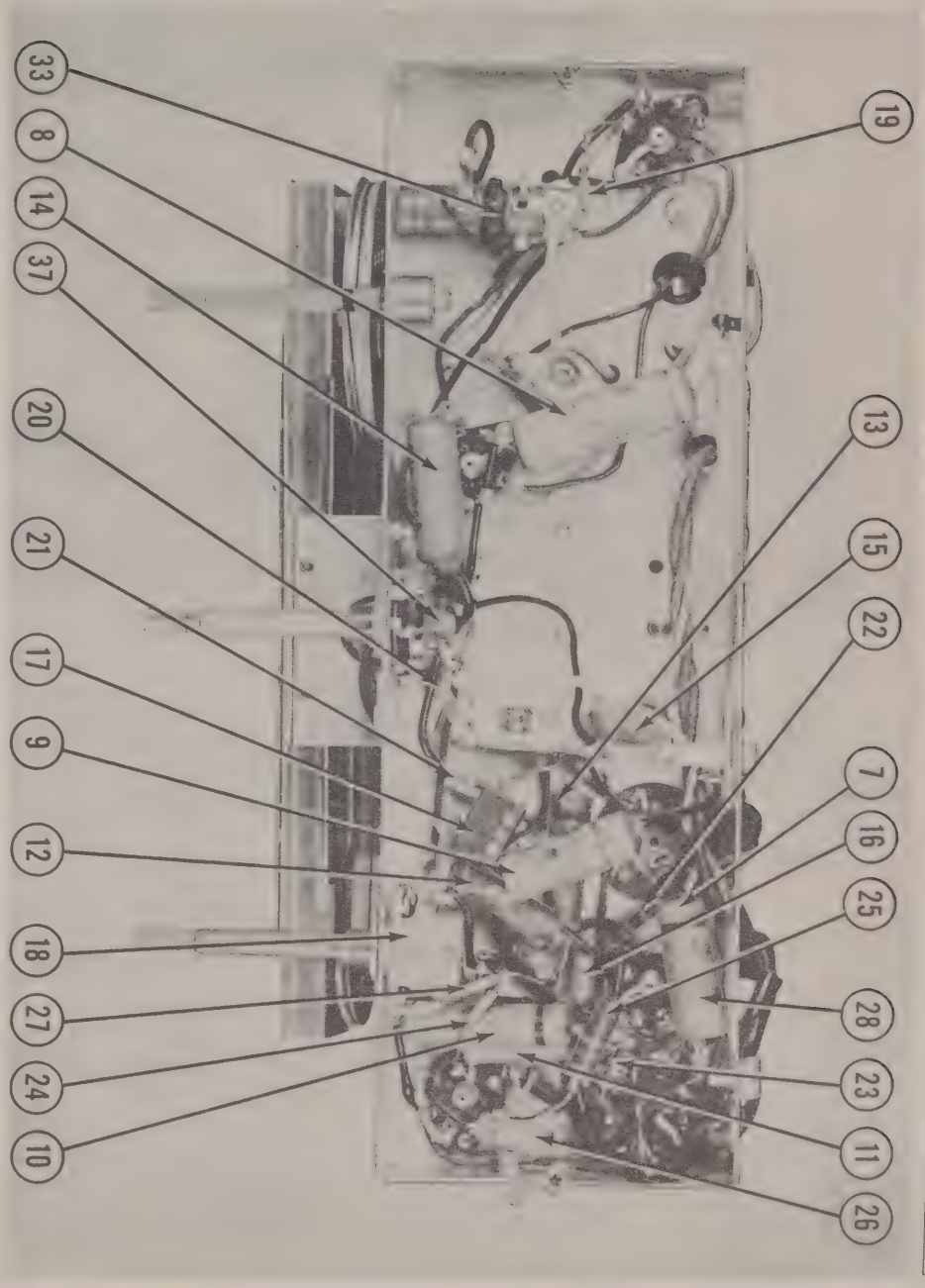
MISCELLANEOUS

ITEM No.	PART NAME	MAJESTIC PART No.	NOTES
37	Switch	11-66	Radio-Phono (11-67 Alternate)
38	2 Gang Var. Cap.	7-31	32-450MMF, 34-200 MMF
	Dial Scale	117-94	
	Dial Pointer	135-19	

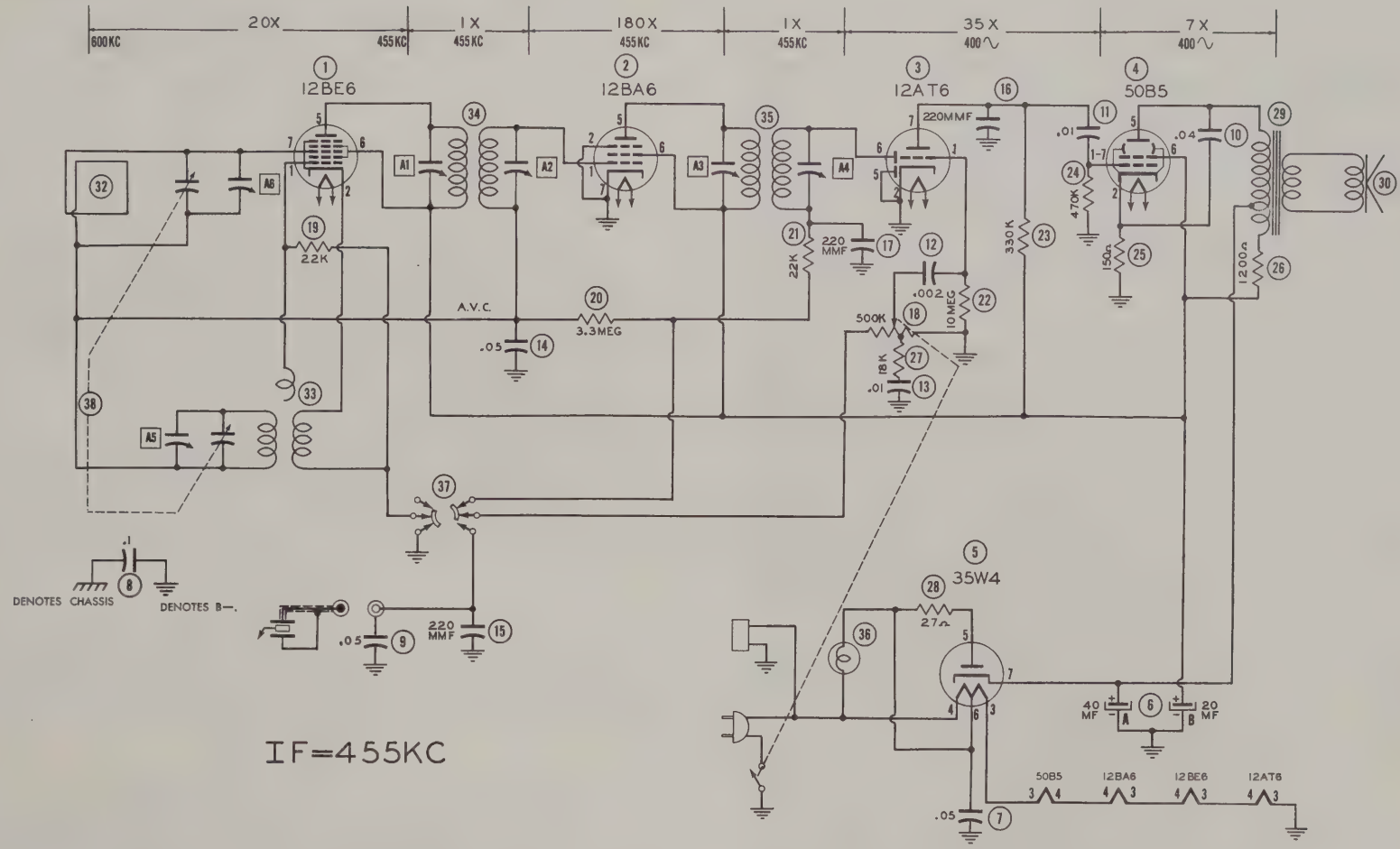


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



MAJESTIC MODELS 5AK780, 5AK731



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	-9VDC§	0V.	12VAC	24VAC	83VDC	83VDC	-.4VDC
2	12BA6	-.4VDC	0V.	24VAC	36VAC	83VDC	83VDC	0V.
3	12AT6	-.6VDC	0V.	0V.	12VAC	0V.	-.6VDC	40VDC
4	50B5	0V.	5VDC	87VAC	36VAC	107VDC	83VDC	0V.
5	35W4	113VDC	83VDC	87VAC	117VAC	110VAC	112VAC	113VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	22KΩ	1Ω	13Ω	24Ω	90KΩ	90KΩ	3.5 Meg.
2	12BA6	3.5 Meg.	0Ω	24Ω	35Ω	90KΩ	90KΩ	0Ω
3	12AT6	10 Meg.	0Ω	0Ω	13Ω	0Ω	500KΩ	420KΩ
4	50B5	500KΩ	150Ω	85Ω	35Ω	90KΩ	90Ω	500KΩ
5	35W4	90KΩ	90KΩ	85Ω	115Ω	140Ω	110Ω	90KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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4718-19

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MAJESTIC MODELS
12FM475, 12FM778, 12FM779, (Ch. 41201)

MAJESTIC MODEL 12FM475

TRADE NAME	Majestic, Model 12FM475, 12FM778, 12FM779 (Ch. 41201)
MANUFACTURER	Majestic Radio & Tel. Corp., Elgin, Ill.
TYPE SET	AC Operated FM-AM Radio-Phono Superheterodyne Receiver with Loop Antenna
TUBES (TWELVE)	Types, 6BA6 FM RF Amp., 6BE6 FM Converter, 6SG7 AM RF Amp., 6SA7 AM Converter, 6SG7 FM-AM IF Amp., 6SG7 FM IF Amp., 6SH7 Limiter, 6S8GT Discriminator-Det.-AVC-AF, 6SJ7 Phase Inverter, (2) 6V6GT Power Output, 5U4G Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .940 Amp. @ 117 Volts AC
TUNING RANGE	BROADCAST - 540-1600KC, SHORT WAVE - 9.4-15.5MC, FREQ. MOD. - 87.5-108.5MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD.	High side to Pin 8 (grid) 6SA7. Low side to chassis.	455KC	BC (fully clockwise)	600KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
2		Loop	"	"	"	"	A5	Fashion a single turn loop with the signal gen. leads and radiate signal into loop of receiver. Adjust for minimum output.
3		"	1500KC	"	1500KC	"	A6	Adjust for maximum output.
4		"	"	"	Tune for maximum output.	"	A7,A8	" " " "
5		"	600KC	"	"	"	A9	Rock tuning cap. and adjust for maximum output. Repeat Steps 3, 4 & 5 until no further improvement can be made.
6	400Ω carbon res.	High side to terminal "A1" of ant. terminal strip. Low side to chassis.	15MC	SW (1 position counter-clockwise from fully clockwise)	15MC	"	A10	Adjust for maximum output.
7	"	"	15MC	"	Tune for maximum output.	"	A11, A12.	Rock tuning capacitor & adjust for maximum output.

FOR FM ALIGNMENT PROCEDURE SEE PAGE 10.

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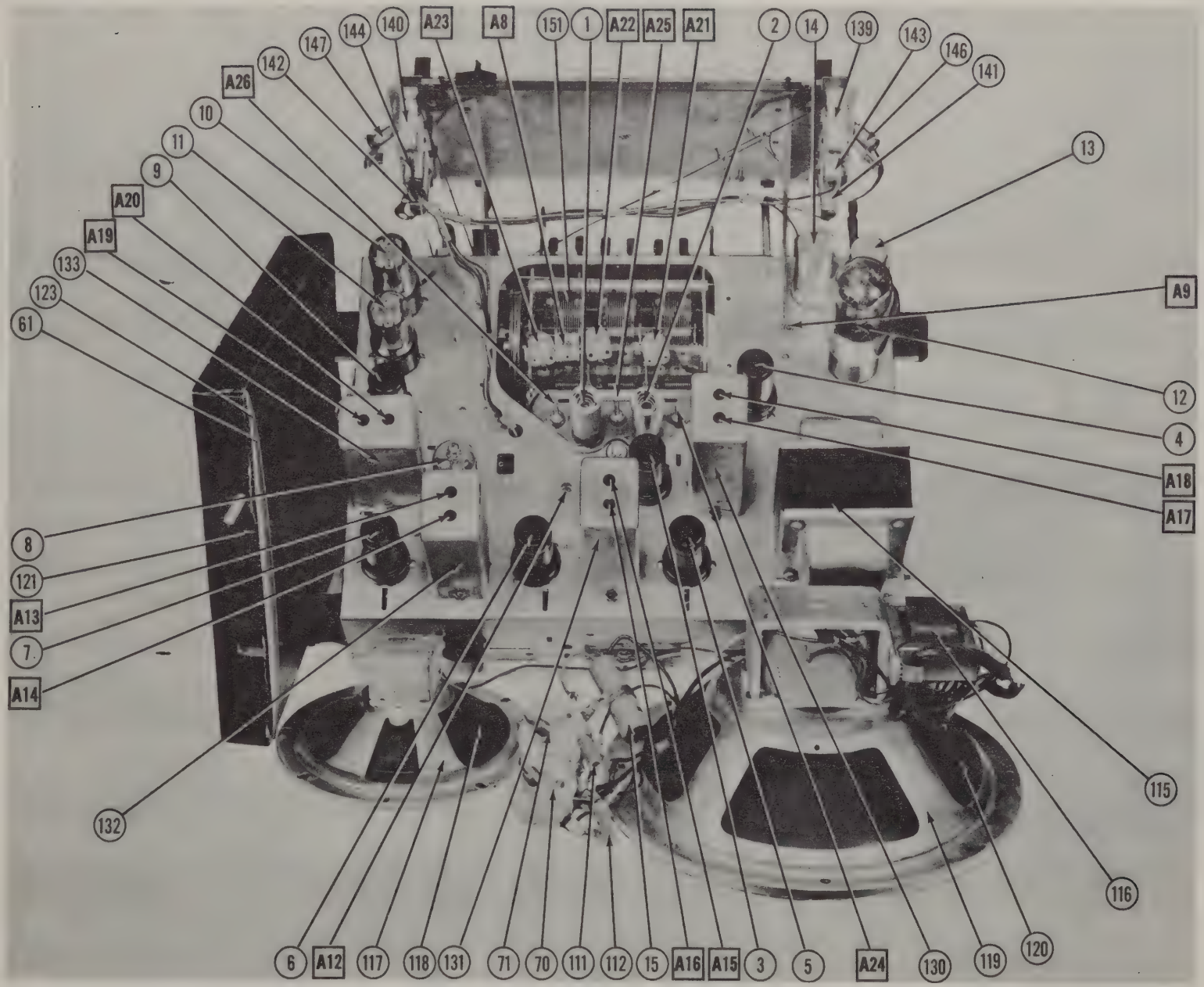
DATE 11/47 SET #28 FOLDER #4718-20

MAJESTIC MODELS PAGE 1
12FM475, 12FM778, 12FM779, (Ch. 41201)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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	FM RF Amp.	6BA6	6BA6	7BK	
2	FM Converter	6BE6	6BE6	7CH	
3	AM RF Amp.	6SQ7	6SQ7	8BK	
4	AM Converter	6SA7	6SA7	8R	
5	FM AM IF Amp.	6SG7	6SG7	8BK	
6	FM IF Amp.	6SG7	6SG7	8BK	
7	Limiter	6SH7	6SH7	8BK	
8	Discriminator Det.-AVC-AF	6S8GT	6S8GT	8CB	
9	Phase Inv.	6SJ7	6SJ7	9N	
10	Power Output	6V6GT	6V6GT	7AC	
11	" "	6V6GT	6V6GT	7AC	
12	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MAJESTIC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
13A	10	450	19-34	FP231	DY-2x10-450	EL-210	AF22J	UP1145	■ Filter
B	10	450							▲ "
14	30	450	19-35	FP145	DY-30-450	EL-3	AF6J	UP3045	"
15	100	10	19-36	TC2501	M-100-12	UHC-112	PRS25-100	BRH121	Tone Compensation
16	.05	600	5-77	TP415	S-6-05	TC-15	684-05	DT6S5	Audio Coupling
17	.05	600	5-77	TP415	S-6-05	TC-15	684-05	DT6S5	" "
18	.006	600	5-69	TP409	S-6-006	TC-26	684-006	DT6D6	Tone Compensation
19	.01	600	5-74	TP410	S-6-001	TC-11	684-01	DT6S1	Audio Coupling
20	.02	400	5-63	TP423	S-4-02	TC-12	484-02	DT6S2	" "
21	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Tone Compensation
22	.001	1500	5-84	OW341	TM-16-001	TR-21	1684-001	ND16D1	Output Plate Bypass
23	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	Limiter Plate Decoupling
24	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	2nd IF Plate Decoupling
25	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" " Cathode Bypass
26	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	1st IF Plate Decoupling
27	.02	400	5-63	TP423	S-4-02	TC-12	484-02	DT6S2	AVC Filter
28	.05	400	5-64	TP426	S-4-05	TC-15	484-05	DT4S5	" "
29	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	FM Conv. Plate Decoupling
30	.05	400	5-64	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
31	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	AM RF Plate Decoupling
32	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	AM RF Screen Bypass
33	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	RF Bypass
34	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	RF Bypass
35	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	AM Conv. Screen Bypass
36	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	AM Conv. Plate Decoupling
37	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	RF Bypass Power Supply
38	.0012	500	6-234						De-emphasis
39	100	500	6-232	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Disc. Diode Filter
40	2000	400	6-231	MC457	MW.5-22	1FM-22	1467-002	1W5D2	Limiter Screen Bypass Cer
41	2000	400	6-231	MC457	MW.5-22	1FM-22	1467-002	1W5D2	2nd IF Screen Bypass Cer.
42	2000	400	6-231	MC457	MW.5-22	1FM-22	1467-002	1W5D2	1st IF Screen Bypass Cer.
43	1000	400	6-230	MC255	MO.5-21	1FM-21	1468-001	1W5D1	FM Conv. Screen Byp. Cer.
44	15	500	6-199						FM Osc. Grid Cer.
45	1000	500	6-218	MC255	MO.5-21	1FM-21	1468-001	1W5D1	Fixed Padder
46	24	500	6-143						RF Coupling Cer.
47	1000	400	6-230	MC255	MO.5-21	1FM-21	1468-001	1W5D1	FM RF Plate Decoup. Cer.
48	1000	400	6-230	MC255	MO.5-21	1FM-21	1468-001	1W5D1	FM RF Screen Bypass Cer.
49	1000	400	6-230	MC255	MO.5-21	1FM-21	1468-001	1W5D1	FM RF Cathode Byp. Cer.
50	47	500	6-159	MC225	MO.5-325	1FM-45	1468-00005	5W5Q5	Ant. Coupling Cer.
51	220	500	6-86	MC240	MO.5-325	1FM-325	1468-00025	5W5T2	AF Plate Bypass
52	220	500	6-86	MC240	MO.5-325	1FM-325	1468-00025	5W5T2	Diode RF Filter
53	220	500	6-86	MC240	MO.5-325	1FM-325	1468-00025	5W5T2	" " "
54	47	500	6-159	MC225	MO.5-325	1FM-325	1468-00005	5W5Q5	Osc. Grid Cap. Cer.
55	220	500	6-207						Fixed Padder ± 2% Cer.
56	470	500	6-102						RF Coupling
57	234								Fixed Padder Cer.
58	5			MC205	MO.5-55	MS-55	1468-000005	5W5V5	RF Coupling Cer.
59	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	BC RF Coil Bypass Silver
60	234								Fixed Padder Cer.
61	47	500	6-159	MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Ext. Ant. Coupling Cer.
62	1000	400	6-230	MC255	MO.5-21	1FM-21	1468-001	1W5D1	Filament Bypass Cer.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.
115	117V AC @ .94A	600V CT @ .117A	5.0V AC @ 3.0A	6.2V AC @ 4.6A	2-19	P-4080*	T22R32*	P-3153*

*Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
116A	4700Ω CT	2.5Ω	700Ω CT	.7Ω	22-28-2	A-3870	T22S62		
116B					22-43-2				Alternate transformer for Models 12FM778 & 12FM779

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-108		
117A	PM	3.5Ω	22-17	Mod. P8-X		
B			22-43			Alternate Speaker for Models 12FM778 & 12FM 779
	CONE DIA.	VC DIA.				
118	6-3/8"	1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT.		
	FIELD RES.	VC IMP.				
119	380Ω	3.4Ω	22-28			
	CONE DIA.	VC DIA.				
120	10"	1"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: MEISSNER PART No.	
121	Loop Ant.		.2Ω	20-27		Items 121 & 123 mounted on loop ant. assby.
122	FM Ant.					
123	Loop Load. Coil		2Ω			
124	SW Ant. Coil	1.3Ω	0Ω	3-185	14-1044	
125	FM Ant. Coil	0Ω	0Ω	3-183		
126A	BC RF Coil	55Ω	4.5Ω	3-186		Items 126A & B wound on same form.
B	SW " "	1Ω	0Ω			
127	FM RF Coil		0Ω	3-184		
128A	BC Osc. Coil		0Ω	3-171		Items 128A & B wound on same form.
B	SW " "		5.5Ω			
129	FM " "		0Ω	3-189		
130A	AM Input IF	11Ω	5.5Ω§	3-173		Items 130A & B wound on same form.
B	FM " "		.2Ω			
131A	AM OutputIF	5.5Ω#	10Ω	3-174		Items 131A & 131B are in same can.
B	FM 2nd IF		.2Ω			
132	FM 3rd IF	.2Ω	.2Ω	3-175		
133	Disc. Trans.					
134	Wave Trap.		21Ω	S-1468		
135	RF Choke		1.5Ω	3-187		
136	" "		.2Ω	3-188		
137	" "		.2Ω	3-198		
138	" "		4.5Ω	3-104		

§Includes both sec. #Includes both pri.

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	MAJESTIC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
63	1000	400	6-230	MC2S5	MO.5-21	1FM-21	1468-001	1WSD1	" "
64	10000	500	6-182	MC475	MW.3-11	1FM-11	1467-01	1D3S1	" "
65	10000	500	6-182	MC475	MW.3-11	1FM-11	1467-01	1D3S1	" "
66	10000	500	6-182	MC475	MW.3-11	1FM-11	1467-01	1D3S1	" "
67	10000	500	6-182	MC475	MW.3-11	1FM-11	1467-01	1D3S1	" "

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	MAJESTIC PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
68A	2 Meg.	½	13-25	MRT451	D18-137X		Volume Control
B	Shaft		Not Req.	Not Req.	A		Attach to 68A per instructions
69A	2 Meg.	½	14-7	MK403		AM-83-S	Tone Control
B	Shaft		Not Req.	Not Req.		KSS-3	Attach to 69A per instructions
C	Switch		" "	M26		SW-A	" " " " "
70	25Ω	25	13-23				Accoustical Balancer
71	25Ω	25	13-23				Hi-Low Balancer

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MAJESTIC PART No.	IRC PART No.	
72	5600Ω	1	9-130	BTA-5600	Grn.-Blue-Red FM-RF Plate Decoupling
73	22KΩ	¼	9-222	BTS-22K	Red-Red-Or. FM Oscillator Grid
74	22KΩ	2	9-209	BT-2-22K	Red-Red-Or. FM Converter Screen Dropping
75	22KΩ	½	9-253	BTS-22K	Red-Red-Or. FM Converter Plate Decoupling
76	10Ω	¼	01-2	BW-½-10	Br.-Blk.-Blk. Parasitic Suppressor
77	100Ω	¼	01-44	BW-½-100	Br.-Blk.-Br. AM-RF Cathode
78	47KΩ	½	9-235	BTS-47K	Yl.-Vi.-Or. AM-RF Screen Dropping
79	5600Ω	1	9-130	BTA-5600	Grn.-Blue-Red AM-RF Plate Decoupling
80	470KΩ	¼	9-223	BTS-470K	Yl.-Vi.-Yl. AVC Network
81	470KΩ	¼	9-223	BTS-470K	Yl.-Vi.-Yl. AM Converter Grid
82	22KΩ	2	9-209	BT-2-22K	Red-Red-Or. AM Converter Screen Dropping
83	22KΩ	½	9-253	BTS-22K	Red-Red-Or. AM Converter Plate Decoupling
84	22KΩ	¼	9-222	BTS-22K	Red-Red-Or. AM Oscillator Grid
85	470KΩ	¼	9-223	BTS-470K	Yl.-Vi.-Yl. AVC Network
86	1 Meg.	¼	9-255	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
87	47KΩ	½	9-235	BTS-47K	Yl.-Vi.-Or. 1st IF Screen Dropping
88	5600Ω	1	9-130	BTA-5600	Grn.-Blue-Red 1st IF Plate Decoupling
89	56KΩ	¼	01-160	BTS-56K	Grn.-Blue-Or. Diode RF Filter
90	470KΩ	¼	9-223	BTS-470K	Yl.-Vi.-Yl. Diode Load
91	82Ω	½	9-283	BW-½-82	Gray-Red-Blk. 2nd IF Cathode
92	47KΩ	½	9-235	BTS-47K	Yl.-Vi.-Or. 2nd IF Screen Dropping
93	5600Ω	1	9-130	BTA-5600	Grn.-Blue-Red 2nd IF Plate Decoupling
94	470KΩ	¼	9-223	BTS-470K	Yl.-Vi.-Yl. Series Test Jack
95	33KΩ	½	9-256	BTS-33K	Or.-Or-Or. Limiter Screen Bleeder
96	100KΩ	½	9-8	BTS-100K	Br.-Blk.-Yl. Limiter Screen Dropping
97	470KΩ	½	9-211	BTS-470K	Yl.-Vi.-Yl. Limiter Plate Decoupling
98	47KΩ	¼	9-121	BTS-47K	Yl.-Vi.-Or. De-emphasis
99	18KΩ	¼	9-225	BTS-18K	Br.-Gray-Or. Tone Compensation
100	10 Meg.	¼	9-213	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
101	470kΩ	¼	9-223	BTS-470K	Yl.-Vi.-Yl. AF Plate Load
102	1 Meg.	¼	9-255	BTS-1 Meg.	Br.-Blk.-Grn. Phase Inverter Grid
103	2200Ω	½	9-7	BTS-2200	Red-Red-Red Phase Inverter Cathode
104	47KΩ	½	9-235	BTS-47K	Yl.-Vi.-Or. Phase Inverter Cathode
105	47KΩ	½	9-235	BTS-47K	Yl.-Vi.-Or. Phase Inverter Plate Load
106	270KΩ	¼	9-295	BTS-270K	Red-Vi.-Yl. Output Grid
107	270KΩ	¼	9-295	BTS-270K	Red-Vi.-Yl. Output Grid
108	250Ω	5	9-290	AB-250	Output Cathode
109	12KΩ	½	9-264	BTS-12K	Br.-Red-Or. Decoupling
110	2.2 Meg.	½	9-240	BTS-2.2 Meg	Red-Red-Grn. Phono Feedback
111	2Ω	5	9-297	AB-2	Tone Compensation
112	2Ω	5	9-297	AB-2	Tone Compensation
113	68Ω	¼	9-294	BW-½-68	Blue-Gray-Blk. FM-RF Cathode
114	47KΩ	1	9-283	BTA-47K	Yl.-Vi.-Or. FM-RF Screen Dropping

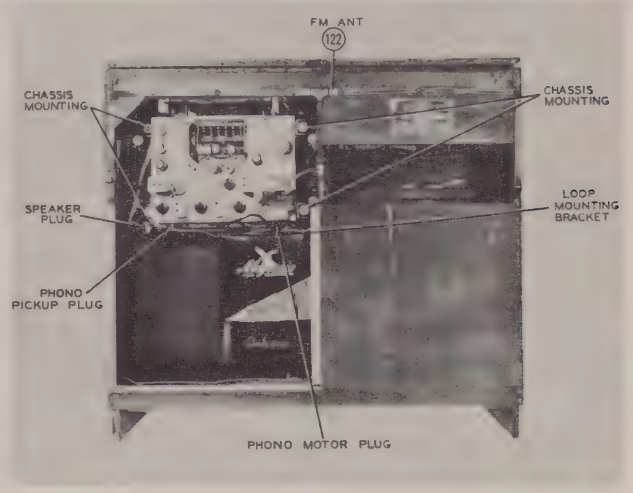
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MAJESTIC PART No.		
139	Bayonet	6-8	0.15	Brown			Type 47
140	"	"	"	"			"
141 thru 148	"	"	0.25	"			Type 44

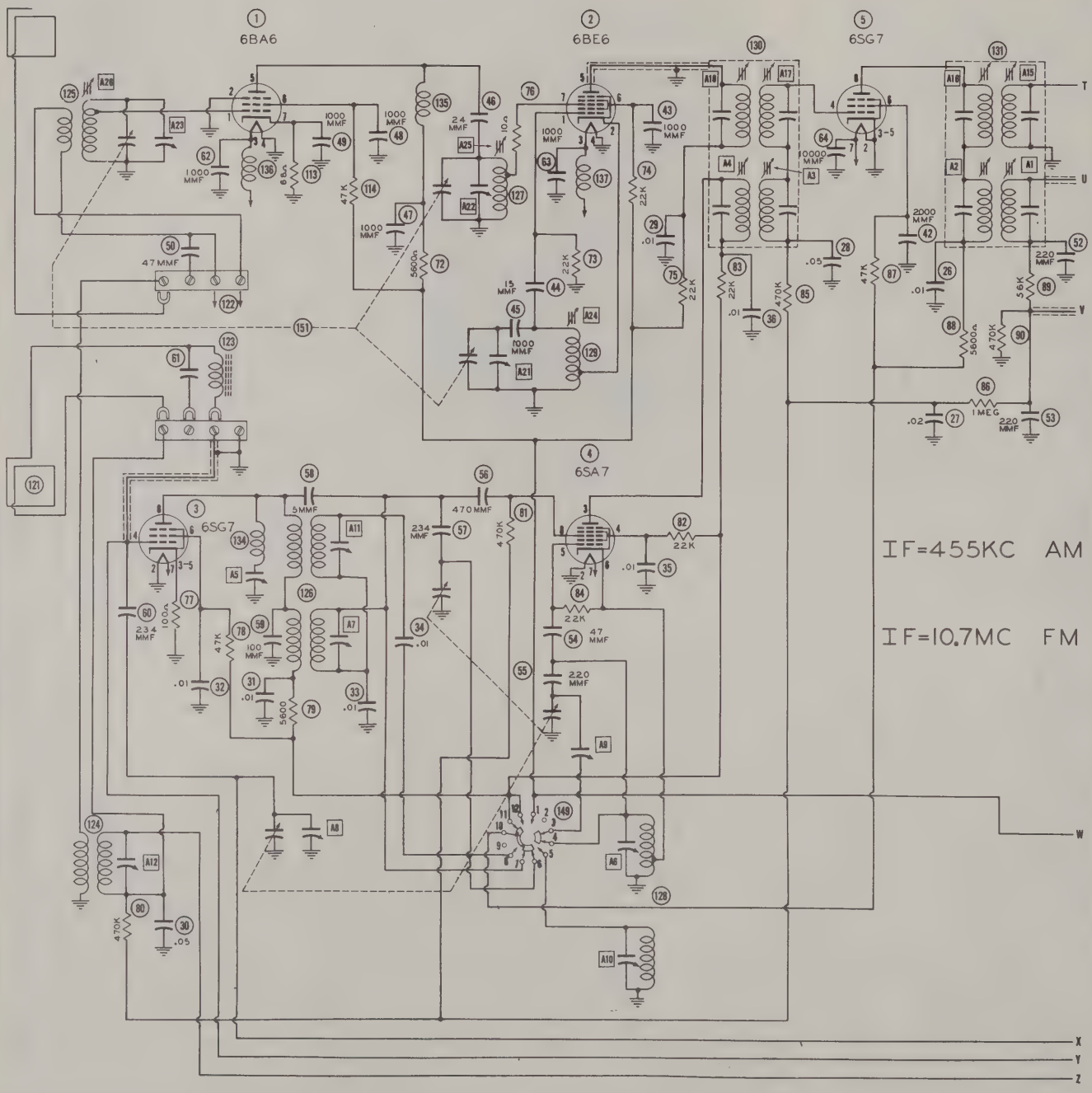
MISCELLANEOUS

ITEM No.	PART NAME	MAJESTIC PART No.	NOTES
149	Bandswitch	11-58	Items 149 & 150 ganged together
150	"	11-59	
151	Tuning Capacitor	7-17	
A5	Trimmer	8-63	Wave Trap Adj.
A8	"	8-35	BC Ant. Adj.
A21	"	8-38	FM Osc. Adj.
A22	"	8-38	FM RF Adj.
A23	"	8-38	FM Ant. Adj.
	Dial Pointer	135-4	



DISASSEMBLY INSTRUCTIONS

1. Remove six push-on type control knobs.
2. Remove lock nut from acoustic blender shaft.
3. Remove lock nut from hi-lo balancer shaft.
4. Remove loop antenna lead from chassis.
5. Remove loop from cabinet.
6. Remove lead FM dipole lead connecting to chassis.
7. Remove phono-motor plug from chassis.
8. Remove phono-pickup plug from chassis.
9. Disconnect the two speaker plugs.
10. Remove short wave antenna lead from chassis.
11. Remove push button panel from cabinet before removing chassis from cabinet. To remove pushbutton panel spring inward on the two brackets located at front end of chassis and lift up on panel at same time.
12. Remove four screws holding chassis in cabinet. Remove chassis from cabinet.
13. Remove eight screws holding panel between chassis and speakers. Remove panel from cabinet.
14. Remove four hex nuts from each speaker. Remove speakers from cabinet.



THE COOPERATION OF THE MANUFACTURER OF THIS
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A PHOTOFACT STANDARD NOTATION SCHEMATIC
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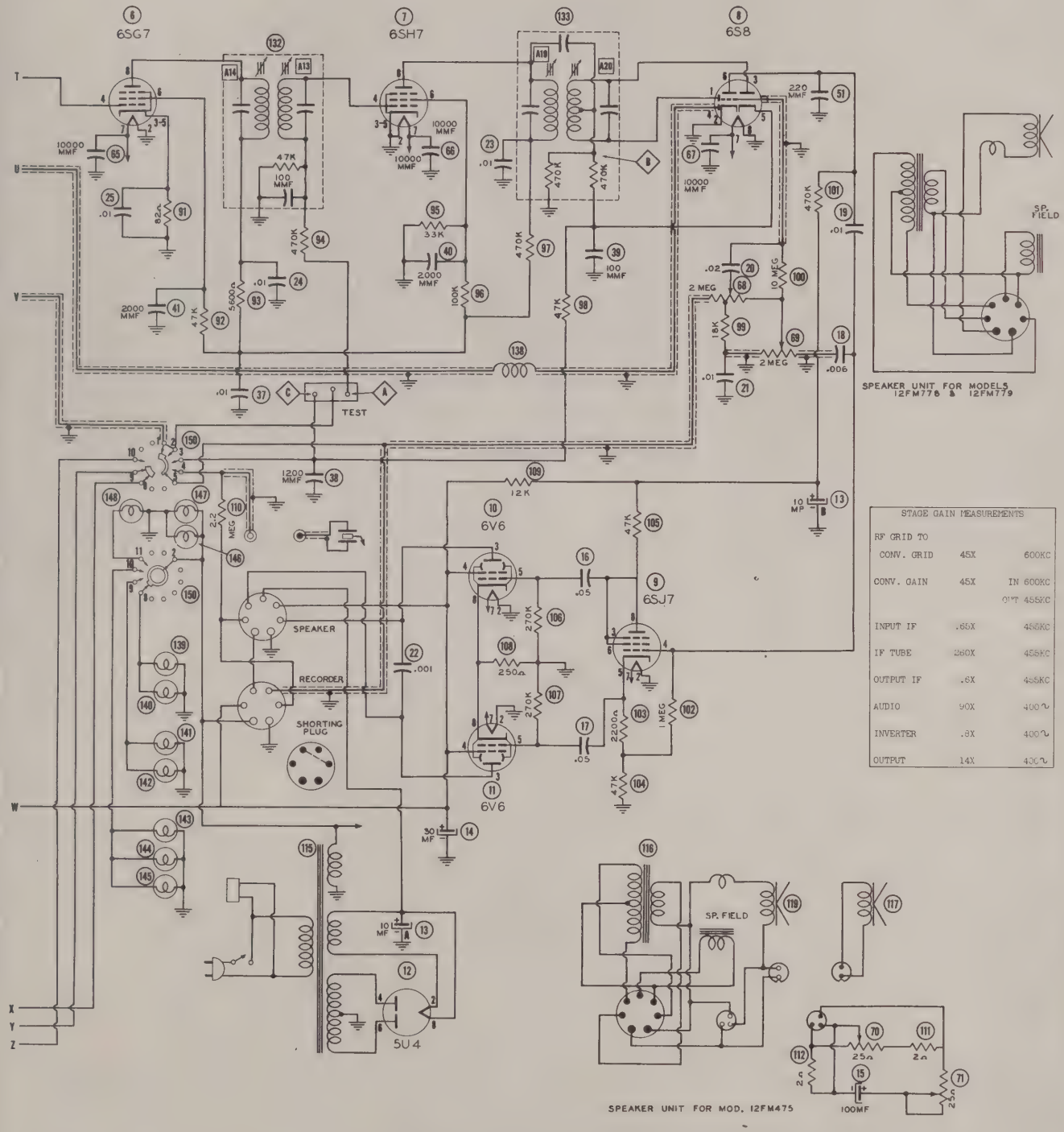

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡	1	6BA6	0V.	0V.	6.2VAC	0V.	225VDC	85VDC	.8VDC	-
‡	2	6BE6	-5VDC§	0V.	6.2VAC	0V.	230VDC	105VDC	0V.	-
	3	6SG7	0V.	0V.	1.2VDC	-.1VDC	1.2VDC	135VDC	6.2VAC	245VDC
	4	6SA7	0V.	0V.	238VDC	103VDC	-18VDC§	0V.	6.2VAC	-.1VDC
	5	6SG7	0V.	0V.	0V.	-.7VDC	0V.	113VDC	6.2VAC	238VDC
‡	6	6SG7	0V.	0V.	1.1VDC	0V.	1.1VDC	115VDC	6.2VAC	230VDC
‡	7	6SH7	0V.	0V.	0V.	-.7VDC	0V.	35VDC	6.2VAC	3.4VDC
	8	6S8GT	-.5VDC	0V.	-.5VDC	-.4VDC	-.1VDC	85VDC	6.2VAC	0V.
	9	6SJ7	0V.	0V.	175VDC	2.7VDC	90VDC	175VDC	6.2VAC	175VDC
	10	6V6GT	0V.	0V.	275VDC	285VDC	0V.	0V.	6.2VAC	19VDC
	11	6V6GT	0V.	0V.	275VDC	285VDC	0V.	0V.	6.2VAC	19VDC
	12	5U4G	0V.	340VDC	0V.	300VAC	0V.	300VAC	0V.	340VDC

RESISTANCE READINGS

	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡	1	6BA6	0Ω	0Ω	.2Ω	0Ω	85KΩ	130KΩ	68Ω	-
‡	2	6BE6	22KΩ	0Ω	.2Ω	0Ω	100KΩ	100KΩ	10Ω	-
	3	6SG7	0Ω	0Ω	100Ω	1.8 Meg.	100Ω	130KΩ	.1Ω	85KΩ
	4	6SA7	0Ω	0Ω	100KΩ	100KΩ	22KΩ	1Ω	.1Ω	1.8 Meg.
	5	6SG7	0Ω	0Ω	0Ω	1.8 Meg.	0Ω	130KΩ	.1Ω	85KΩ
‡	6	6SG7	0Ω	0Ω	82Ω	.2Ω	82Ω	130KΩ	.1Ω	85KΩ
‡	7	6SH7	0Ω	0Ω	0Ω	50KΩ	0Ω	180KΩ	.1Ω	550KΩ
	8	6S8GT	500KΩ	0Ω	500KΩ	360KΩ	1 Meg.	600KΩ	.1Ω	0Ω
	9	6SJ7	0Ω	0Ω	140KΩ	1 Meg.	50KΩ	140KΩ	.1Ω	140KΩ
	10	6V6GT	0Ω	0Ω	80KΩ	80KΩ	260KΩ	INF.	.1Ω	250Ω
	11	6V6GT	0Ω	0Ω	80KΩ	80KΩ	270KΩ	2 Meg.	.1Ω	250Ω
	12	5U4G	INF.	80KΩ	INF.	76Ω	INF.	72Ω	INF.	80KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

1 1/2 TURNS
5 1/2 TURNS
TUNING GANG OPEN
7 TURNS ANCHORED AT 1 1/2 TURNS
DIAL CORD DRIVE

PERFORM AM ALIGNMENT FIRST AS SHOWN ON PAGE 1.

FM ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Connect synchronized sweep voltage from signal generator to horizontal amplifier. Modulate signal with 60~, 300KC deviation.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
8	.01 MFD.	High side to Pin 4 (grid) of 6SG7 2nd IF tube (6). Low side to chassis.	10.7MC (freq. modulated)	FM (2 positions counter-clock-wise from fully clock-wise.)	88MC	Vertical amplifier to Point A. Ground to chassis.	A13,A14	Adjust for maximum amplitude and symmetry per Figure 1.
9	.01 MFD.	High side to Pin 4 (grid) of 6SG7 1st IF Tube (5). Low side to chassis.	"	"	"	"	A15,A16	"
10	.01 MFD.	High side to Pin 7 (grid) of 6BE6 Low side to chassis.	"	"	"	"	A17,A18	"
11	.01 MFD	High side to Pin 4 (grid) of 6SG7 2nd IF tube (6). Low side to chassis.	"	"	"	Vertical amplifier to blank terminal on disc. transformer(Point B). Ground to chassis	A19	"
12	.01 MFD	"	"	"	"	Vertical amplifier to Point C. Ground to chassis	A20	Adjust for highest symmetrical pattern per figure 2 adjusting for maximum straightness of diagonal line. It may be necessary to alternately adjust A19 & A20 for best possible curve.
13	DIRECT	Connect to FM dipole terminals at rear of chassis.	108MC (freq. modulated)	"	108MC	Vertical amplifier to Point A. Ground to chassis	A21	Center curve in the center of pattern per Figure 1.
14	DIRECT	"	"	"	"	"	A22, A23	Adjust for maximum amplitude.
15	DIRECT	"	88MC (freq. modulated)	"	88MC	"	A24	Center curve in the center of pattern per Figure 1.
16	DIRECT	"	"	"	"	"	A25, A26	Adjust for maximum amplitude. Repeat Steps 13, 14, 15 & 16 until no further improvement can be made.

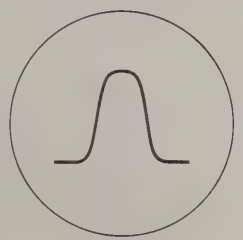


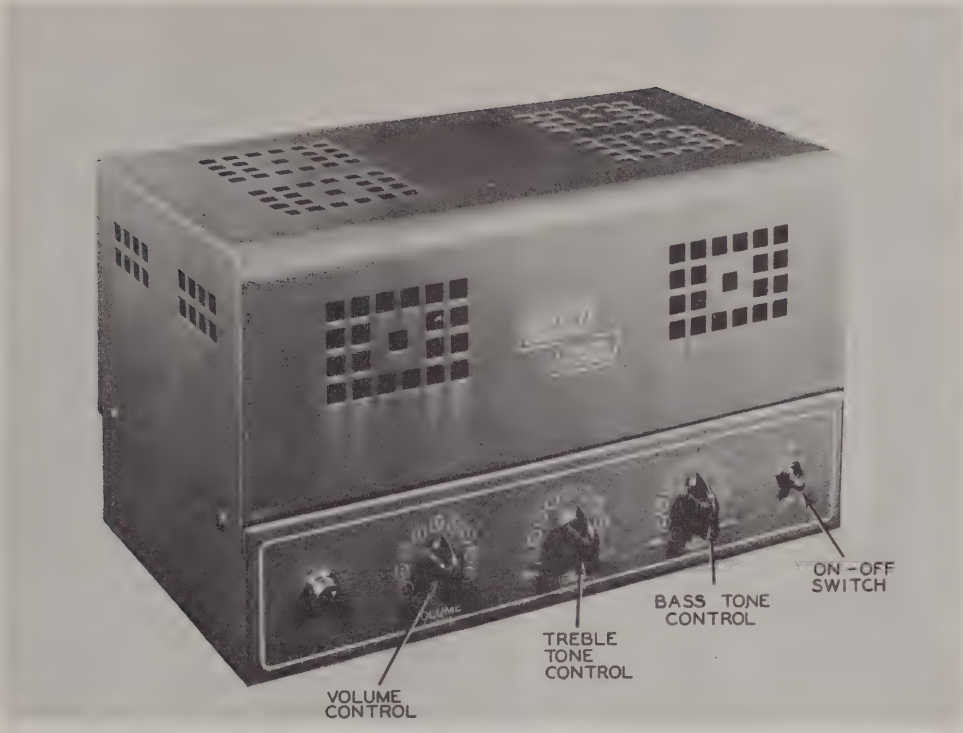
FIGURE 1

FIGURE 2

FM ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

In all FM Alignment calling for measurement at Point A keep output of signal generator so as to give approximately 2 volt reading.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8	.01 MFD	High side to Pin 4 (grid) of 6SG7 2nd IF Tube #6. Low side to chassis.	10.7MC	FM (2 positions counter-clock-wise from fully clock-wise).	88MC	DC probe of VTVM to Point A. Common lead to chassis.	A13,A14	Adjust for maximum deflection. Rock sig. gen. above and below 10.7MC to check for symmetrical IF response.
9	.01 MFD.	High side to Pin 4 (grid) of 6SG7 1st IF Tube #5. Low side to chassis.	"	"	"	"	A15,A16	"
10	.01 MFD.	High side to Pin 7 (grid) of 6BE6 Low side to chassis.	"	"	"	"	A17,A18	" Repeat Steps 8, 9 & 10.
11	.01 MFD.	"	"	"	"	DC probe of VTVM to blank terminal on disc. transformer.(Point B).Common lead to chassis.	A19	Adjust for maximum deflection.
12	.01 MFD.	"	"	"	"	DC probe of VTVM to Point C. Common lead to chassis.	A20	If available use a zero center scale VTVM. Adjust for zero voltage.
13	DIRECT	Connect to FM dipole terminals at rear of ch chassis.	108MC	"	108MC	DC probe of VTVM to Point A. Common lead to chassis.	A21	Adjust for maximum deflection.
14	DIRECT	"	"	"	Tune for maximum output.	"	A22,A23	"
15	DIRECT	"	88MC	"	88MC	"	A24	"
16	DIRECT	"	"	"	Tune for maximum output.	"	A25, A26.	Adjust for maximum deflection. Repeat Steps 13, 14, 15 & 16 until no further improvement can be made.



MASCO MODEL MA-20HF

TRADE NAME	Masco, Model MA-20HF
MANUFACTURER	Mark Simpson Mfg. Co. Inc., 32-28 49th St., Long Island City, N.Y.
TYPE SET	AC Operated Six Tube Amplifier
TUBES (SIX)	Types, 6SJ7 AF Amp., 6SL7GT AF-Phase Inverter, 6SL7GT Driver, (2) 6L6GA Power Output, 5U4G Rectifier.
POWER SUPPLY	110-120 Volts AC RATING 1.5 Amps. @ 117V AC

INPUTS

#1-(G & B on input terminal strip). This provides an uncompensated high impedance (500,000 ohms) input with a voltage sensitivity of .2 volts for full output. This input is for use with all high impedance input devices not requiring equalization such as magnetic pickups, etc.

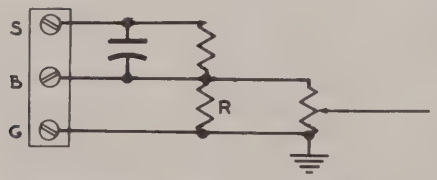
#2-(G & S on input terminal strip). This provides a specially compensated high impedance (3.5 megohms) input with a voltage sensitivity of .5 volts for full output. The compensating network in this input is designed to provide a more uniform response from crystal pickups for greater realism an life in record reproduction.

LOW-IMPEDANCE INPUTS

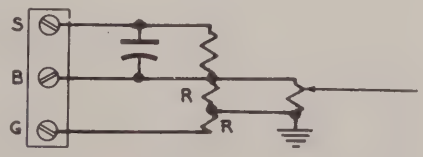
#1 input may be altered for use with low-impedance devices such as telephone lines, etc.

A. UNBALANCED INPUT - Connect line to G & B and add resistor (R) which equals line impedance.

B. BALANCED INPUT - Connect line to G & B, add resistors (R), each resistor being equal to 1/2 line impedance, and remove ground lead from terminal G and connect to junction of resistors (R).



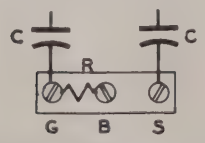
UNBALANCED INPUT



BALANCED INPUT

RECORDING

MAGNETIC CUTTER - Match cutter to proper impedance directly on amplifier output strip.
CRYSTAL CUTTER - Wire terminal strip as per circuit below.



C - .1 to .5 MFD - 600 volt paper condenser.
R - Matching resistor (unnecessary for constant amplitude recording). Value of R should be value recommended by cutter manufacturer (generally around 50,000 ohms).

TYPE OF RECORDING - TERMINALS
Constant velocity S & B
Constant amplitude S & G

NOTE-WHEN USING A CRYSTAL CUTTER, THE AMPLIFIER MUST BE CONNECTED TO EITHER A SPEAKER LOAD OR A RESISTOR LOAD PROPERLY MATCHED TO ANY ONE OF THE OUTPUT TAPS.

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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DATE 11/47 SET #28 FOLDER #4718-21

PARTS LIST AND DESCRIPTIONS

MASCO MODEL MA-20HF

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		MASCO PART No.	STANDARD REPLACEMENT		
1	AF Amp.		6SJ7	8N	
2	AF-Phase Inv.		6SL7GT	8BD	
3	Driver		6SL7GT	8BD	
4	Power Output		6L6GA	7AC	
5	Power Output		6L6GA	7AC	
6	Rectifier		5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	MASCO PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
7	8	600		HS693	D-8-600	AP86	GL-600-8	KR608	Filter
8	8	600		HS693	D-8-600	AP86	GL-600-8	KR608	"
9	8	450		TC71	M-8-450	UT8	PRS450-8	BR845	"
10	8	450		TC71	M-8-450	UT8	PRS450-8	BR845	"
11A	8	450		2N518	M-2x8-450	UT88	PRSA-450-8-	BRL8845	" - Red
B	8	450					8		" "
12	10	50		TC32	M-10-50	TA-510	PRS50-10	BR105	Cathode Bypass
13	10	50		TC32	M-10-50	TA-510	PRS50-10	BR105	" "
14	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	Line Filter
15	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	Audio Coupling
16	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	" "
17	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	" "
18	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	" "
19	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Tone Comp.
20	.003	400		TP406	S-6-003	TC-23	484-003	DT6D3	" "
21	500	500		MC245	MO.5-35	1FM-35	1468-0005	5W5T5	" "
22	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	" "
55	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	Audio Coupling

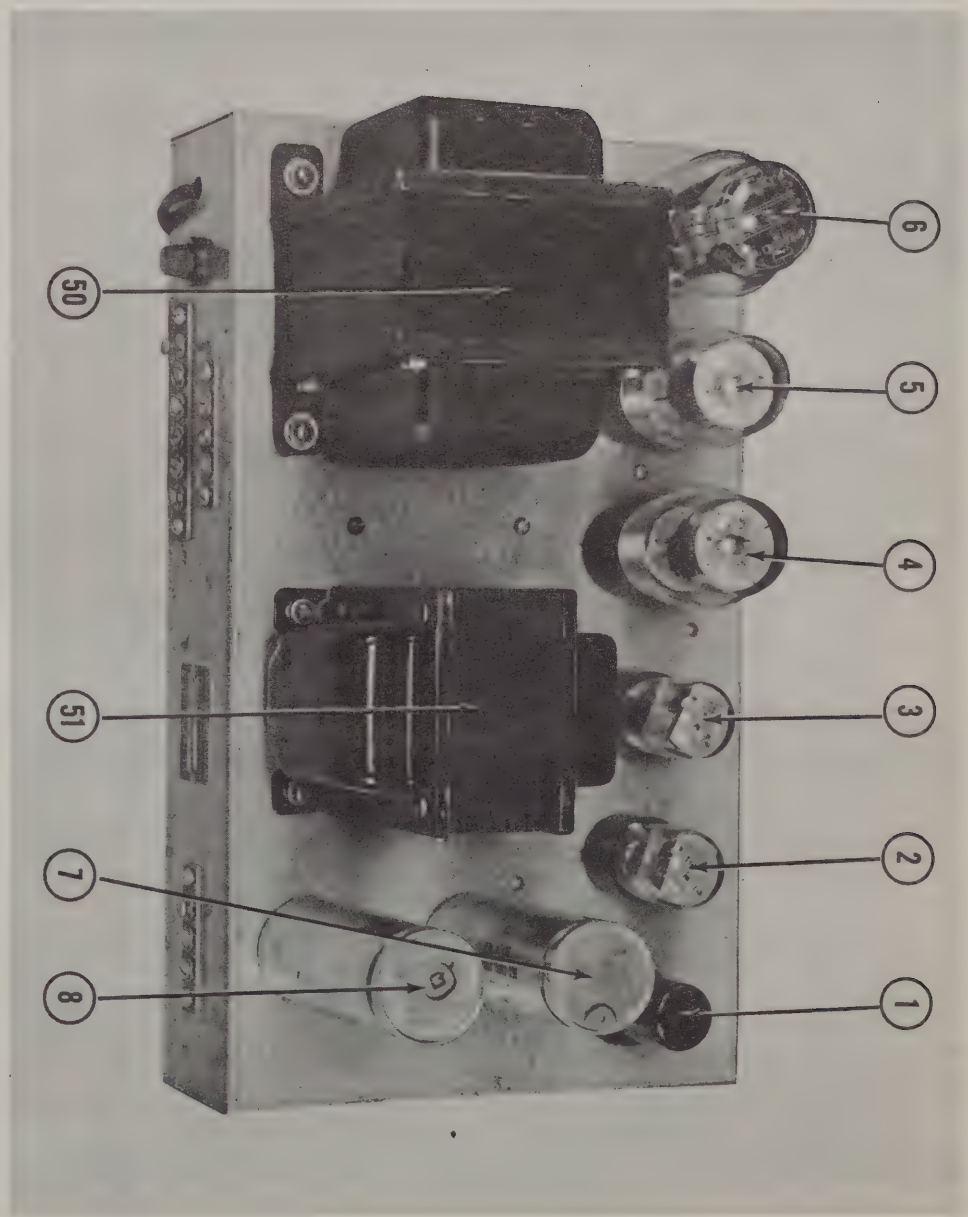
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	MASCO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
23A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 23A per instructions
24A	500KΩ	1		MR48	D13-133	M-60-Z	Bass Control
B	Shaft			Not Req.	A	Not Req.	Attach to 24A per instructions
25A	500KΩ	1		MRT430	D13-133X		Treble Control
B	Shaft			Not Req.	A		Attach to 25A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MASCO PART No.	IRC PART No.	
26	3 Meg.	½		BTS-3.3 Meg.	Or.-Blk.-Grn. Tone Compensation
27	50KΩ	½		BTS-47KΩ	Grn.-Blk.-Or. AF Plate Load
28	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Tone Compensation
29	15KΩ	½		BTS-15K	Br.-Grn.-Or. " "
30	1000Ω	½		BTS-1000	Br.-Blk.-Red AF Cathode
31	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AF Plate Load
32	1000Ω	½		BTS-1000	Br.-Blk.-Red Phase Inverter Cathode
33	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Phase Inverter Plate Load
34	15KΩ	½		BTS-15K	Br.-Grn.-Or. Phase Inverter Grid
35	220KΩ	½		BTS-220K	Red-Red-Yl. Driver Grid
36	220KΩ	½		BTS-220K	Red-Red-Yl. " "
37	1000Ω	½		BTS-1000	Br.-Blk.-Red Driver Cathode

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MASCO PART No.	IRC PART No.	
38	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Driver Plate Load
39	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Driver Plate Load
40	50KΩ	½		BTS-47K	Grn.-Blk.-Or. Voltage Dropping
41	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
42	50KΩ	½		BTS-47K	Grn.-Blk.-Or. " "
43	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Output Grid
44	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
45	200Ω	10		AB-200	Output Cathode
46	10KΩ	20		DG-10K	Bleeder
47	2500Ω	10		AB-2500	Voltage Dropping
48	270KΩ	½		BTS-270K	Red-V1.-Yl. Feedback
56	5000Ω	½		BTS-5000	Grn.-Blk.-Red AF Cathode

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	MASCO PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	
49	.150A	120Ω	8 Henries	C-235	C-2309*	T20C54	C-2993	*Drill new mounting holes.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
50	117V AC	720V CT @ 1.5A	4.8V AC @ .150A	6.3V AC @ 3.0A	A20HF	P-4081*	T22R33	P-3155

*Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
51	4500Ω CT	4Ω 8Ω 250Ω 500Ω	210Ω CT	.4Ω .55Ω 24Ω 32Ω	O-20HF	A-3851*	T22S70*	A-3129*	*Drill new mounting holes.

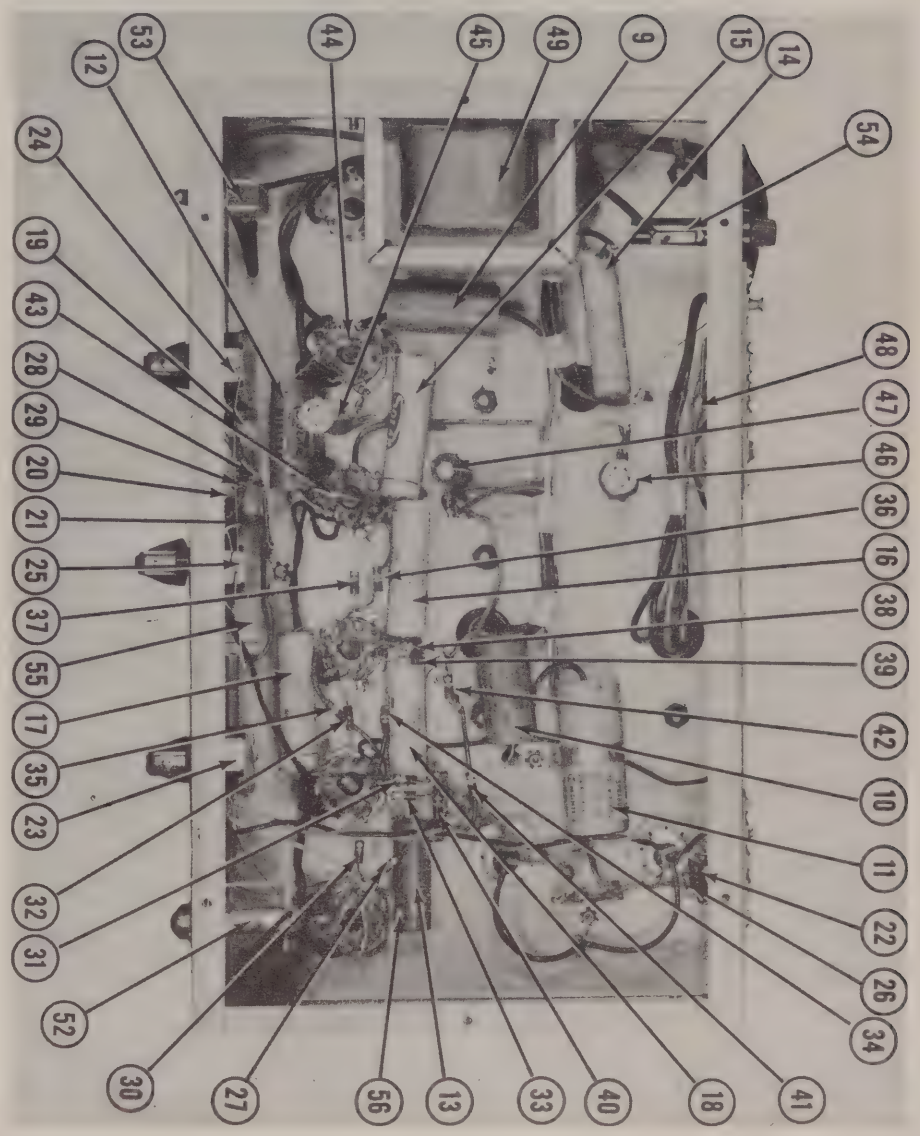
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MASCO PART No.		
52	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

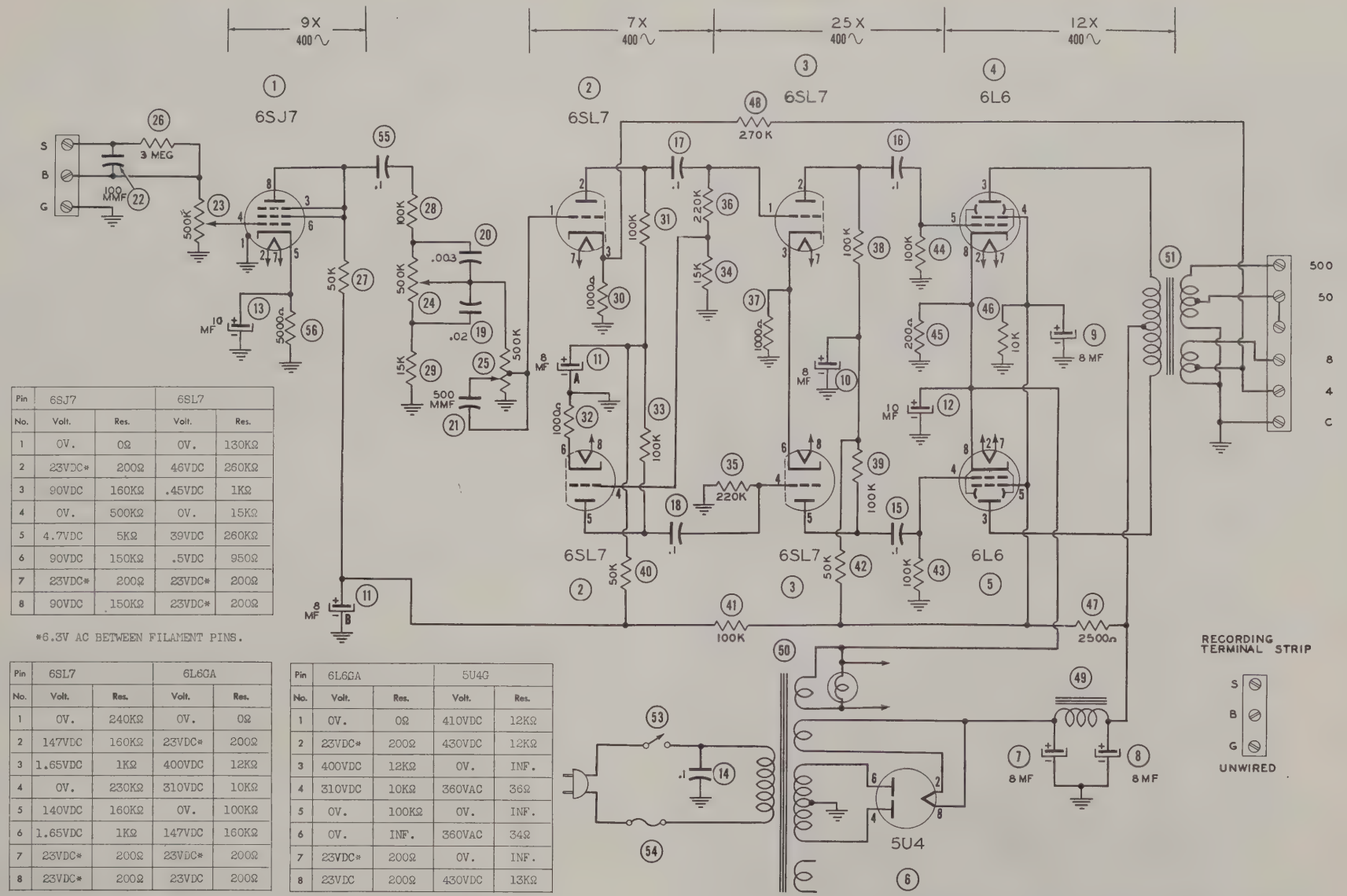
ITEM No.	PART NAME	MASCO PART No.	NOTES
53	Switch		Power
54	Fuse		3 Amp.

CHASSIS—BOTTOM VIEW



MASCO MODEL MA-20HF

MASCO MODEL MA-20HF



Pin	6SJ7		6SL7	
No.	Volt.	Res.	Volt.	Res.
1	0V.	0Ω	0V.	130KΩ
2	23VDC*	200Ω	46VDC	260KΩ
3	90VDC	160KΩ	.45VDC	1KΩ
4	0V.	500KΩ	0V.	15KΩ
5	4.7VDC	5KΩ	39VDC	260KΩ
6	90VDC	150KΩ	.5VDC	950Ω
7	23VDC*	200Ω	23VDC*	200Ω
8	90VDC	150KΩ	23VDC*	200Ω

*6.3V AC BETWEEN FILAMENT PINS.

Pin	6SL7		6L6GA	
No.	Volt.	Res.	Volt.	Res.
1	0V.	240KΩ	0V.	0Ω
2	147VDC	160KΩ	23VDC*	200Ω
3	1.65VDC	1KΩ	400VDC	12KΩ
4	0V.	230KΩ	310VDC	10KΩ
5	140VDC	160KΩ	0V.	100KΩ
6	1.65VDC	1KΩ	147VDC	160KΩ
7	23VDC*	200Ω	23VDC*	200Ω
8	23VDC*	200Ω	23VDC	200Ω

Pin	6L6GA		5U4G	
No.	Volt.	Res.	Volt.	Res.
1	0V.	0Ω	410VDC	12KΩ
2	23VDC*	200Ω	430VDC	12KΩ
3	400VDC	12KΩ	0V.	INF.
4	310VDC	10KΩ	360VAC	36Ω
5	0V.	100KΩ	0V.	INF.
6	0V.	INF.	360VAC	34Ω
7	23VDC*	200Ω	0V.	INF.
8	23VDC	200Ω	430VDC	13KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

4718-21

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Set volume controls at minimum and connect proper output load.

MASCO
MODEL MA-75

MASCO MODEL MA-75

TRADE NAME	Masco, Model MA-75
MANUFACTURER	Mark Simpson Mfg. Co., Inc., 32-28 49th St., Long Island City 3, N.Y.
TYPE SET	AC Operated 3 Channel Thirteen Tube Amplifier
TUBES (THIRTEEN)	Types, (2) 7C7 Mic. Amp., 7F7 Phono AF Amp., 7N7 AF Phase Inv., (2) 6V6GT Driver, (4) 6L6GA Power Output, (2) 5V4G Rectifier, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC
RATING	2.2 Amp. @ 117V AC

IMPORTANT

Turn Amplifier on by pushing switch "77" down. After one minute push switch "78" down, observing this procedure will prevent possible tube or fuse burnouts.

At least four heavy duty PM speakers or driver units should be used with this amplifier. They must be connected before turning on amplifier. A correct load must be connected across the amplifier output at all times during operation.

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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DATE 11/47 SET #28 FOLDER #4718-22

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MASCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Mic. Amp.	7C7	7C7	8V	
2	" "	7C7	7C7	8V	
3	Phono AF Amp.	7F7	7F7	8AC	
4	AF Phase Inv.	7N7	7N7	8AC	
5	Driver	6V6GT	6V6GT	7AC	
6	"	6V6GT	6V6GT	7AC	
7	Power Output	6L6GA	6L6GA	7AC	
8	" "	6L6GA	6L6GA	7AC	
9	" "	6L6GA	6L6GA	7AC	
10	" "	6L6GA	6L6GA	7AC	
11	Rectifier	5V4G	5V4G	5L	
12	"	5V4G	5V4G	5L	
13	"	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

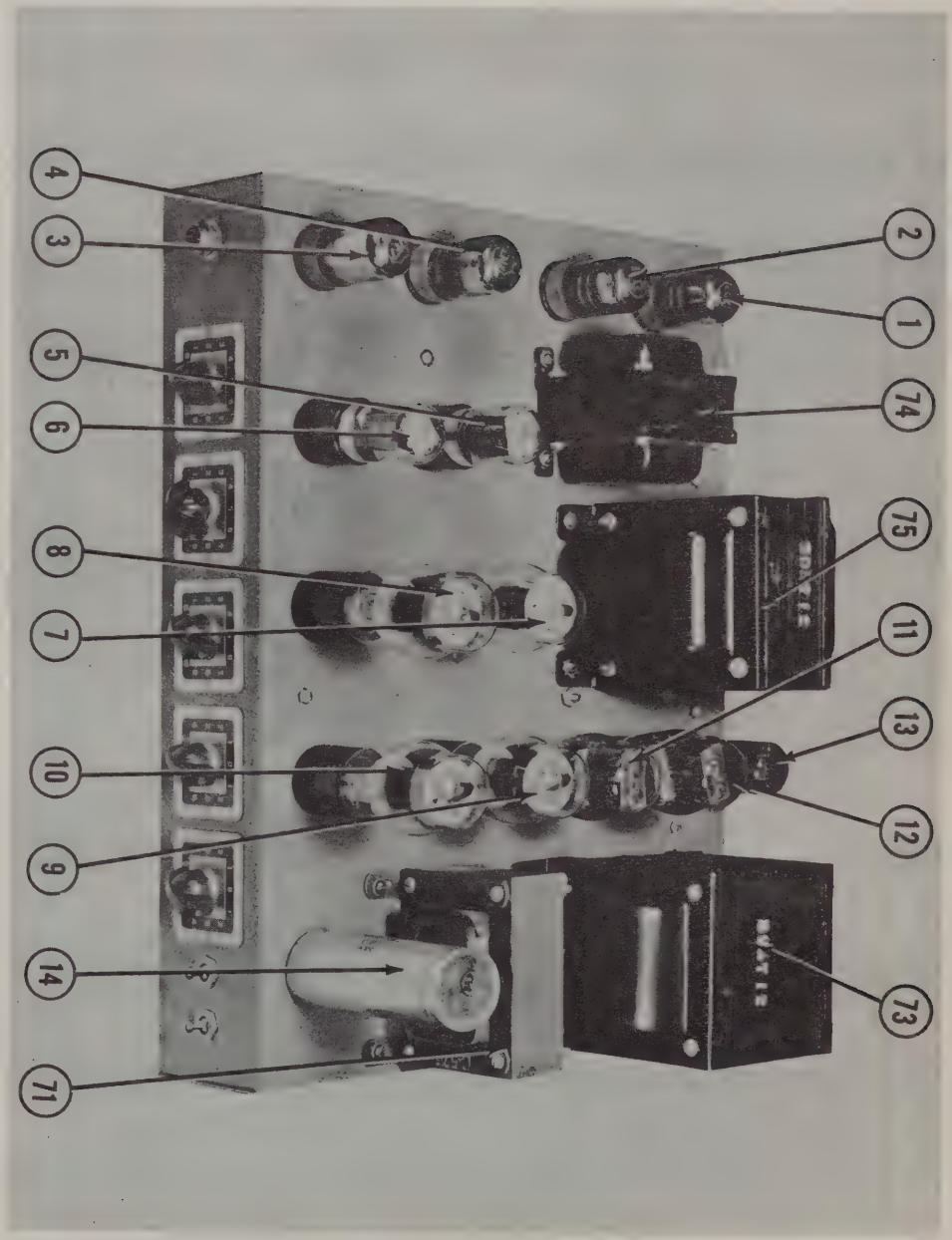
ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MASCO PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
14	8	600		HS693	D-8-600	AP-86	GL600-8	KR608	Filter
15	16	450		TC75	M-16-450	UT-16	PRS450-16	BR1645	"
16	16	450		TC75	M-16-450	UT-16	PRS450-16	BR1645	"
17A	8	450		2N518	M-2x8-450	UT-88	PRSA450-8-8	EZ8845	" - Red
B	8	450							" - "
18	8	450		TC71	M-8-450	UT-8	PRS450-8	BR845	"
19	80	150		2N511‡	DSB-2x40-150‡	TA-440‡	PRSA150-40-40‡	EZ5515‡	Bias Filter
20	10	50		TC32	M-10-50	TA-510	PRS50-10	BR105	Cathode Bypass
21	.1	600		TP418	MPH-6-1	TC-1	684-.1	DT6P1	Line Filter
22	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	Audio Coupling
23	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	" "
24	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	Tone Comp.
25	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	Audio Coupling
26	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	" "
27	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	" "
28	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	Screen Bypass
29	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	" "
30	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
31	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	" "
32	500	500		MC245	MO.5-35	1FM-35	1468-0005	5W5T5	Tone Comp.
33	500	500		MC245	MO.5-35	1FM-35	1468-0005	5W5T5	" "

‡Parallel sections to obtain desired capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MASCO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
34A	500KΩ	½		MR48	D13-133	M-60-Z	Mike 1 Control
B	Shaft			Not Req.	A	Not Req.	Attach to 34A per instructions
35A	500KΩ	½		MR48	D13-133	M-60-Z	Mike 2 Control
B	Shaft			Not Req.	A	Not Req.	Attach to 35A per instructions
36A	500KΩ	½		MR48	D13-133	M-60-Z	Phono Control
B	Shaft			Not Req.	A	Not Req.	Attach to 36A per instructions
37A	500KΩ	½		MR48	D13-133	M-60-Z	Treble Control
B	Shaft			Not Req.	A	Not Req.	Attach to 37A per instructions
38A	500KΩ	½		MR48	D13-133	M-60-Z	Bass Control
B	Shaft			Not Req.	A	Not Req.	Attach to 38A per instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MASCO PART No.	IRC PART No.	
39	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue 1st Mic. Amp. Grid
40	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue 2nd Mic. Amp. Grid
41	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. 1st Mic. Amp. Screen Dropping
42	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. 2nd Mic. Amp. Screen Dropping
43	270KΩ	½		BTS-270K	Red-Vi.-Yl. 1st Mic. Amp. Plate Load
44	270KΩ	½		BTS-270K	Red-Vi.-Yl. 2nd Mic. Amp. Plate Load
45	50KΩ	½		BTS-47K	Grn.-Blk.-Or. Decoupling
46	270KΩ	½		BTS-270K	Red-Vi.-Yl. Isolation
47	270KΩ	½		BTS-270K	Red-Vi.-Yl. "
48	1000Ω	½		BTS-1000	Br.-Blk.-Red 1st AF Cathode
49	50KΩ	½		BTS-47K	Grn.-Blk.-Or. 1st AF Plate Load
50	50KΩ	½		BTS-47K	Grn.-Blk.-Or. Decoupling
51	25KΩ	½		BTS-27K	Red-Grn.-Or. Tone Compensation
52	270KΩ	½		BTS-270K	Red-Vi.-Yl. Tone Compensation
53	1000Ω	½		BTS-1000	Br.-Blk.-Red 2nd AF Cathode
54	50KΩ	½		BTS-47K	Grn.-Blk.-Or. 2nd AF Plate Load
55	50KΩ	½		BTS-47K	Grn.-Blk.-Or. Phase Inverter Plate Load
56	10KΩ	½		BTS-10K	Br.-blk.-Or. Phase Inverter Grid
57	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Driver Grid
58	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
59	400Ω	10		AB-400	Driver Cathode
60	12KΩ	½		BTS-12K	Br.-Red-Or. Decoupling
61	250Ω	½		BW-½-220	Red-Grn.-Br. Parasitic Suppressor
62	250Ω	½		BW-½-220	Red-Grn.-Br. " "
63	250Ω	½		BW-½-220	Red-Grn.-Br. " "
64	250Ω	½		BW-½-220	Red-Grn.-Br. " "
65	15Ω	½		BW-½-15	Br.-Grn.-Blk. " "
66	15Ω	½		BW-½-15	Br.-Grn.-Blk. " "
67	15Ω	½		BW-½-15	Br.-Grn.-Blk. " "
68	15Ω	½		BW-½-15	Br.-Grn.-Blk. " "
69	10KΩ	50		EP-10K	Bleeder
70	500Ω	50		EPA-500	Bias Adjustment

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
73	117V AC @ 2.2A	630V CT @ .11A	680V CT @ .25A	5.3V AC @ 2.0A	A-75			
			SEC. 4	SEC. 5				
			5.3V AC @ 4.0A	6.5V AC @ 6.0A				

FILTER CHOKE

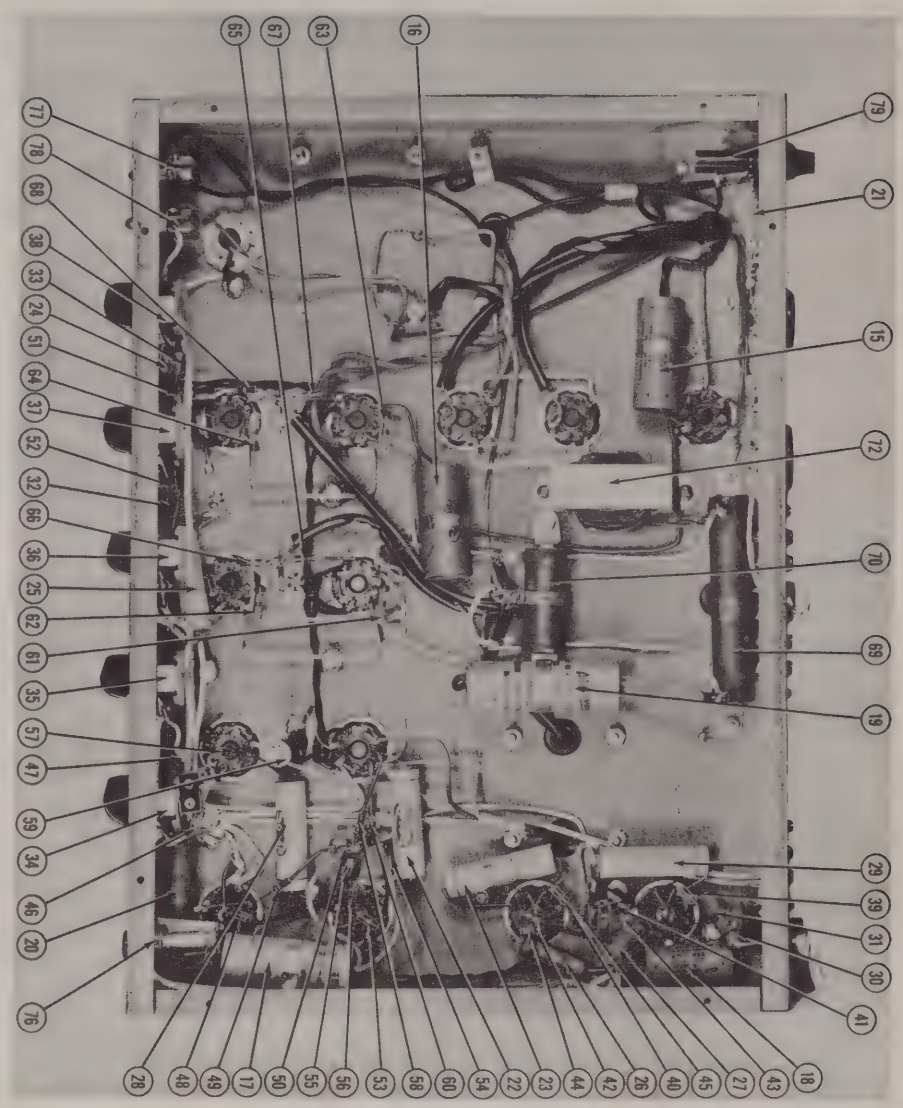
ITEM NO.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	MASCO PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	INSTALLATION NOTES
71	.250A	68Ω	6 Henries	C-575	C-1703*	T20C56*		*Drill new mounting
72	.110A	130Ω	3.2 Henries	C-178	C-2303	T20C54	C-2[illegible]3†	holes.

†Drill one new mounting holes.

TRANSFORMER (DRIVER)

ITEM No.	RATING				REPLACEMENT DATA				
	TURNS RATIO		DC RES.		MASCO PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
	PRI.	SEC.	PRI.	SEC.					
74	3 to 1		195Ω CT	462 CT	IN-75	A-4212*	T20D78*	A-3123*	*Drill new mounting holes.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
75	2500Ω CT	4Ω 8Ω 125Ω 250Ω 500Ω	62Ω CT	.6Ω .9Ω 6.5Ω 10Ω 15Ω	0-75	A-3802*	T22578*		*Drill new mounting holes.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MASCO PART No.		
76	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

ITEM No.	PART NAME	MASCO PART No.	NOTES
77	Switch		On-Off
78	"		Plate B+
79	Fuse		5 Ampere

DATE 11/47 SET #28 FOLDER #4718-22

READ 6.5V AC BETWEEN FILAMENTS OF ALL TUBES EXCEPT RECTIFIERS.

VOLTAGE READINGS

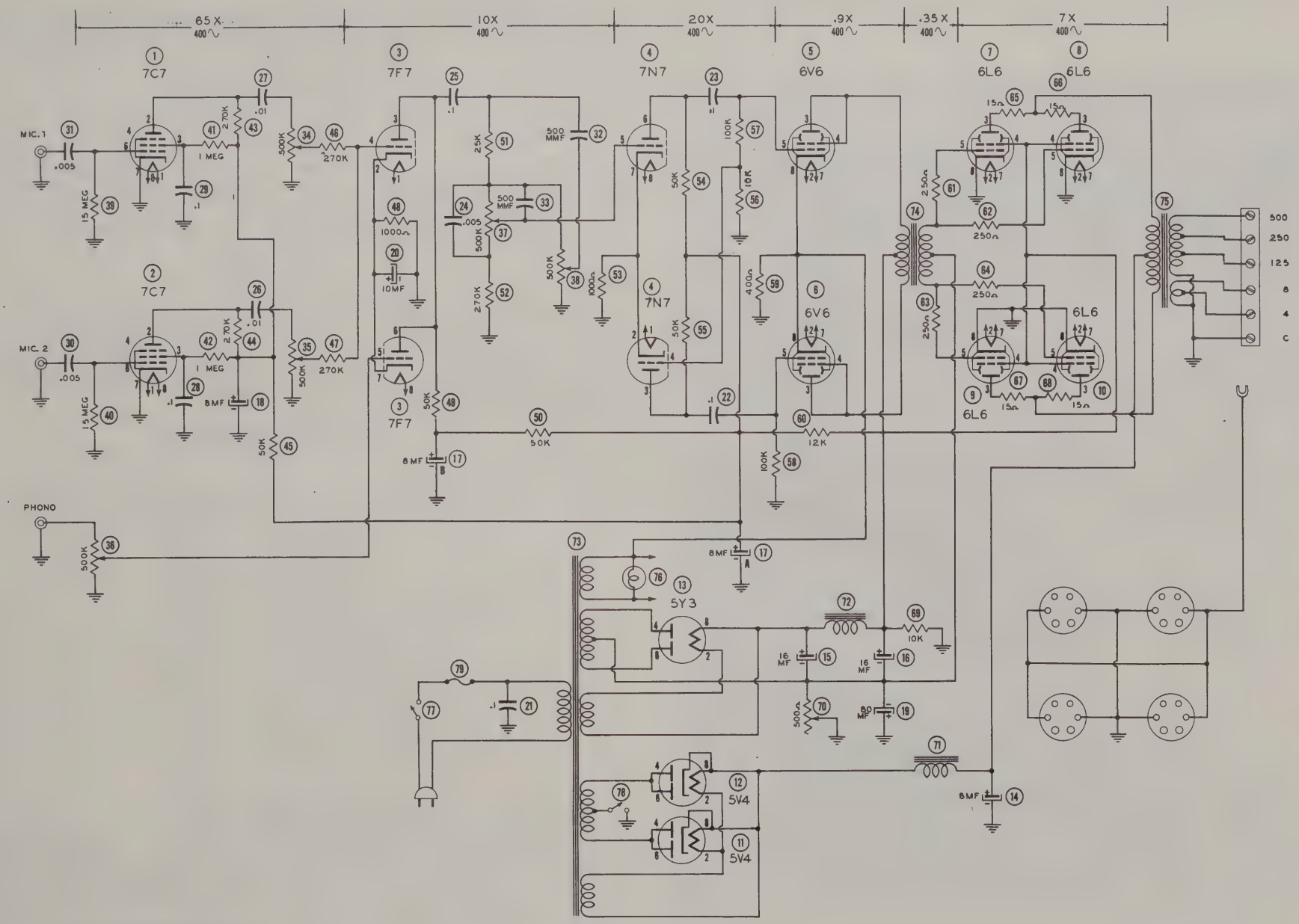
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7C7	20VDC	10VDC	24VDC	0V.	0V.	-.7VDC	0V.	20VDC
2	7C7	20VDC	18VDC	24VDC	0V.	0V.	-.7VDC	0V.	20VDC
3	7F7	20VDC	1.1VDC	87VDC	0V.	0V.	87VDC	1.1VDC	20VDC
4	7N7	20VDC	4VDC	92VDC	0V.	0V.	85VDC	4VDC	20VDC
5	6V6GT	0V.	20VDC	250VDC	250VDC	0V.	250VDC	20VDC	20VDC
6	6V6GT	0V.	20VDC	250VDC	250VDC	0V.	0V.	20VDC	20VDC
7	6L6GA	0V.	20VDC	360VDC	250VDC	-33VDC	-33VDC	20VDC	0V.
8	6L6GA	0V.	20VDC	360VDC	250VDC	-33VDC	-33VDC	20VDC	0V.
9	6L6GA	0V.	20VDC	360VDC	250VDC	-33VDC	-33VDC	20VDC	0V.
10	6L6GA	0V.	20VDC	360VDC	250VDC	-33VDC	-33VDC	20VDC	0V.
11	5V4G	0V.	370VDC	0V.	440VAC	0V.	440VAC	0V.	370VDC
12	5V4G	0V.	370VDC	0V.	440VAC	0V.	440VAC	0V.	370VDC
13	5Y3G	0V.	270VDC	-33VDC	315VAC	0V.	315VAC	0V.	270VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7C7	400Ω	325KΩ	1.1 Meg.	0Ω	0Ω	15 Meg.	0Ω	400Ω
2	7C7	400Ω	325KΩ	1.1 Meg.	0Ω	0Ω	15 Meg.	0Ω	400Ω
3	7F7	400Ω	1KΩ	125KΩ	390KΩ	500KΩ	125KΩ	1KΩ	400Ω
4	7N7	400Ω	1KΩ	75KΩ	10KΩ	250KΩ	75KΩ	1KΩ	400Ω
5	6V6GT	0Ω	400Ω	10KΩ	10KΩ	110KΩ	10KΩ	400Ω	400Ω
6	6V6GT	0Ω	400Ω	10KΩ	10KΩ	100KΩ	INF.	400Ω	400Ω
7	6L6GA	0Ω	400Ω	400KΩ	10KΩ	500Ω	260Ω	400Ω	0Ω
8	6L6GA	0Ω	400Ω	400KΩ	10KΩ	500Ω	260Ω	400Ω	0Ω
9	6L6GA	0Ω	400Ω	400KΩ	10KΩ	500Ω	260Ω	400Ω	0Ω
10	6L6GA	0Ω	400Ω	400KΩ	10KΩ	500Ω	260Ω	400Ω	0Ω
11	5V4G	INF.	400KΩ	INF.	28Ω	INF.	28Ω	INF.	400KΩ
12	6V4G	INF.	400KΩ	INF.	27Ω	INF.	27Ω	INF.	400KΩ
13	5Y3G	INF.	10KΩ	240Ω	300Ω	INF.	290Ω	INF.	10KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Set volume controls at minimum and connect proper output load.



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THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

MONITOR
MODEL M-500

MONITOR
MODEL M-500

MONITOR MODEL M-500

TRADE NAME	Monitor, Model M-500 (Factory No. 475)
MANUFACTURER	Monitor Equipment Co., 110 E. 42nd St., New York, N.Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	520-1590KC RATING .230 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1 MFD capacitor in series with low side of signal generator and chassis. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation.
2	50 MMFD	High side to ext. ant. lead. Low side to chassis.	1590KC	"	"	A4,A5	Adjust for maximum output.

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DATE 11/47 SET #28 FOLDER #4718-23

PARTS LIST AND DESCRIPTIONS

MONITOR
MODEL M-500

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		MONITOR PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	MONITOR PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6A	50	150	2073	FP214	DY-5030-150	EL-35	AF1010D	UP5315	▲ Filter
B	30	150							■ "
7	.05	200		TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
8	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Output Plate Bypass
9	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
10	.002	400		TP405	S-6-002	TC-22	484-002	DT6D2	" "
11	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	.002	400		TP405	S-6-002	TC-22	484-002	DT6D2	Ext. Ant. Isolation
13	.001	200		TP404	S-6-001	TC-21	484-001	DT6D1	AF Plate Bypass
14	330	500		MC241	MO.5-33	1FM-33	1468-0003	5W5T3	Diode Filter
15	220			MC240	MO.5-325	1FM-325	1468-00025	5W5T25	IF Coupling

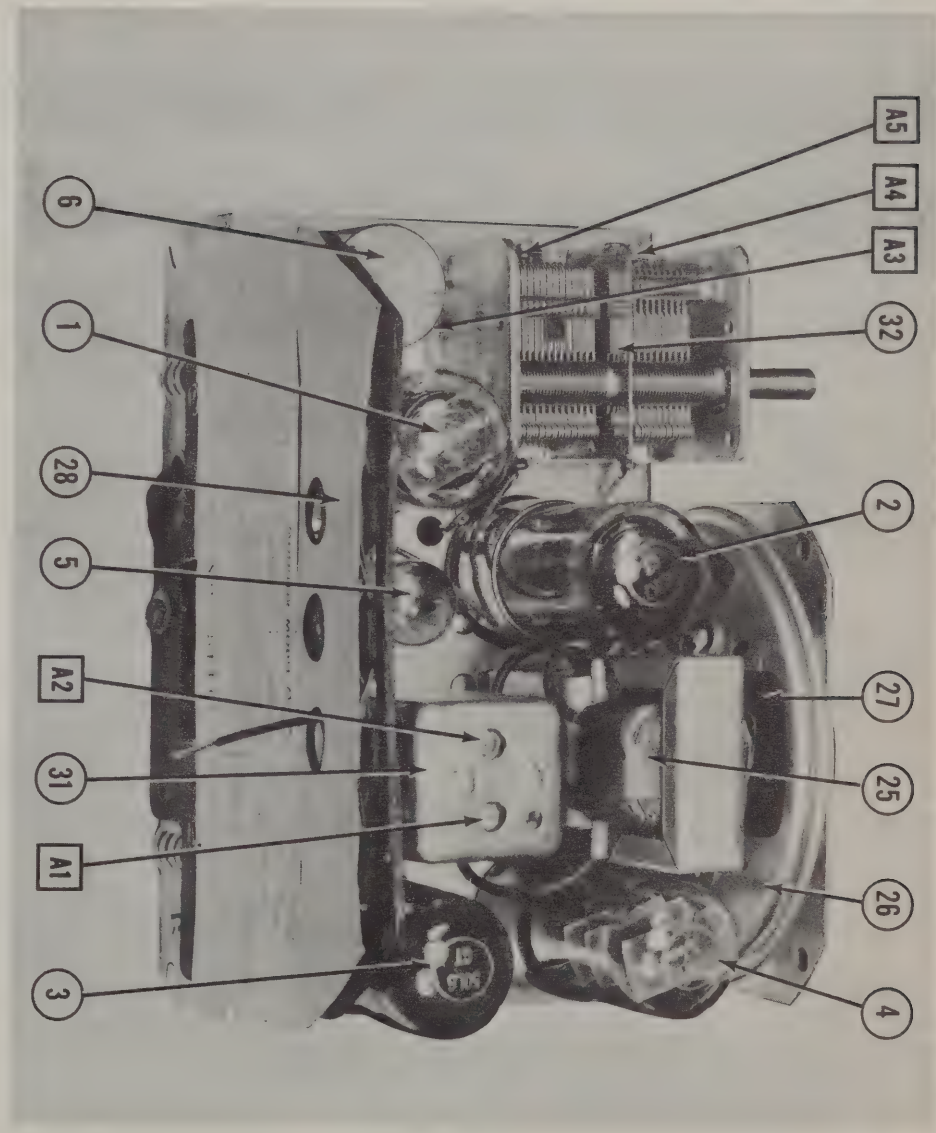
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	MONITOR PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
16A	1 Meg.	½	2484	MR53	D13-137	M-63-Z	Volume Control-Early Production
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
16A	2 Meg.	½	2483	MR55	D13-139	M-66-Z	Volume Control-Later Production
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MONITOR PART No.	IRC PART No.	
17	22KΩ	¼		BTS-22K	Red-Red-Or. Oscillator Grid
18	3.3 Meg.	¼		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
19	1.5 Meg.	¼		BTS-1.5 Meg.	Br.-Grn.-Grn. IF Grid
20	4.7 Meg.	¼		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
21	220KΩ	¼		BTS-220K	Red-Red-Yl. AF Plate Load
22	220KΩ	¼		BTS-220K	Red-Red-Yl. Output Grid
23	2200Ω	1		BTA-2200	Red-Red-Red Filter
24	18Ω	½		BW-½-18	Br.-Gray-Blk. Rectifier Ballast

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MONITOR PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
25	2700Ω	3.0Ω	230Ω	.4Ω	1300	A-3876*	T22845*	A-2928*	*Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MONITOR PART No.	JENSEN PART No.		
	FIELD	VC IMP.				
26	PM	3.0Ω	5877			
	CONE DIA.	VC DIA.				
27	4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

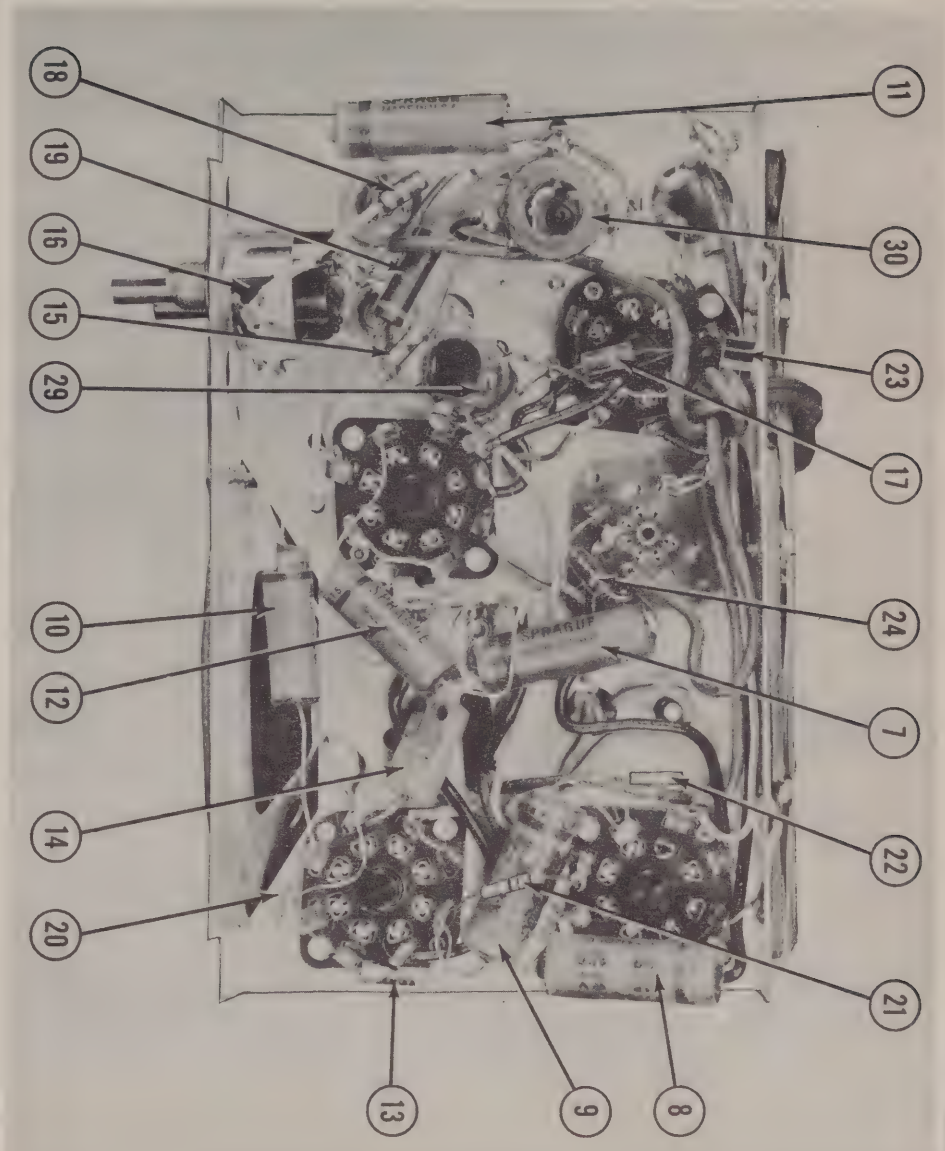
R F COILS

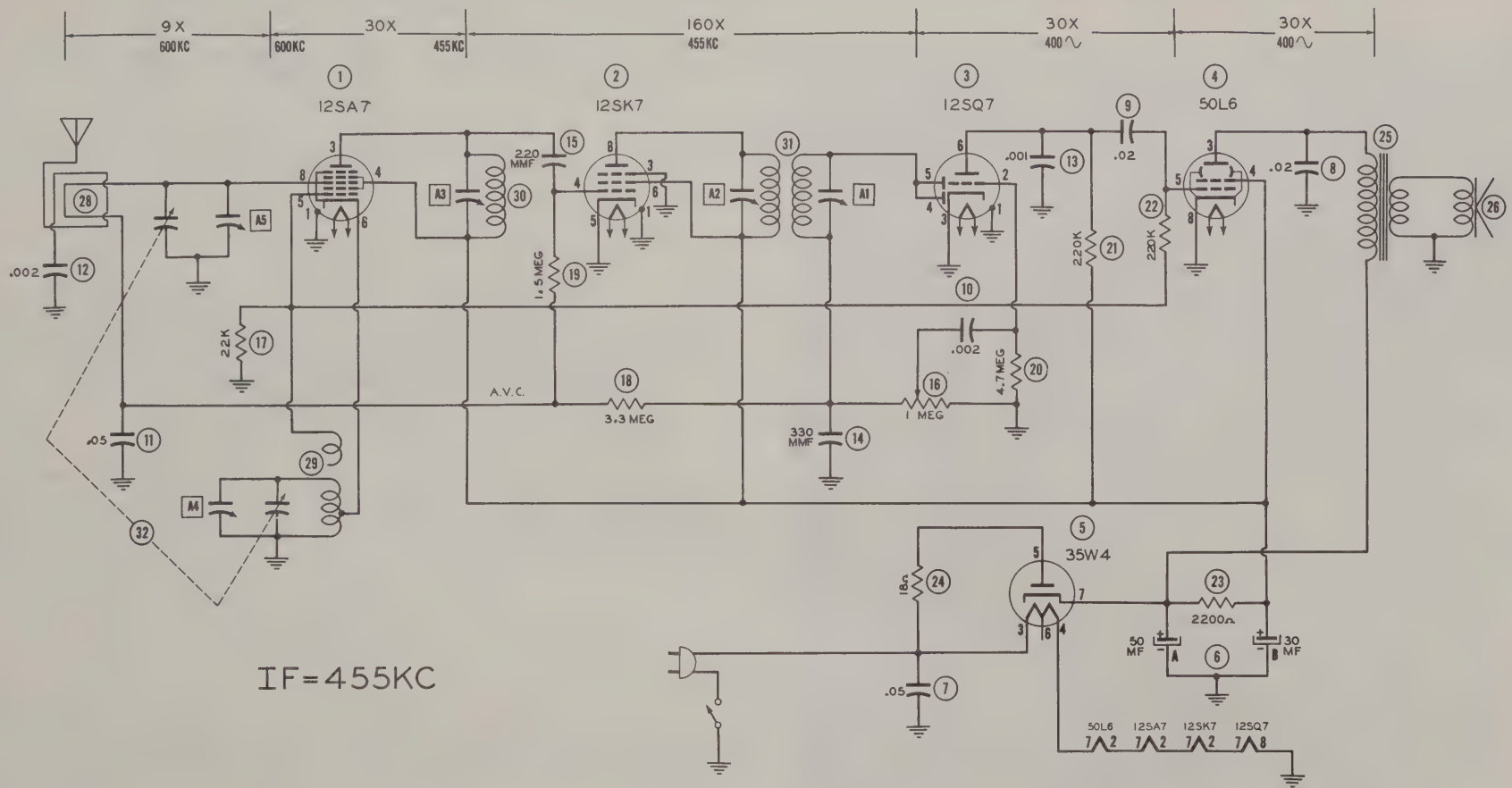
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MONITOR PART No.	MEISSNER PART No.	
28	Loop Ant.	.1Ω	5Ω	62192		
29	Osc. Coil		9Ω	28210	14-1040	Add 50 MMFD from grid to high side tuning cap.
30	Input IF	15Ω		3535		
31	Output IF	30Ω	30Ω	1770	16-6660	

MISCELLANEOUS

ITEM No.	PART NAME	MONITOR PART No.	NOTES
32	2 Gang Var. Cap.	1675	(30-460 MMF, 17-180 MMF)

CHASSIS—BOTTOM VIEW





IF=455KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	24VAC	82VDC	82VDC	-7.4VDC§	0V.	37VAC	-.6VDC
2	12SK7GT	0V.	12VAC	0V.	-1.2VDC	0V.	82VDC	24VAC	82VDC
3	12SQ7GT	0V.	-.8VDC	0V.	-.7VDC	-.7VDC	52VDC	12VAC	0V.
4	50L6GT	0V.	37VAC	117VDC	83VDC	-2.8VDC	-4.2VDC	85VAC	0V.
5	35W4	0V.	0V.	117VAC	85VAC	116VAC	92VAC	127VDC	-

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0Ω	25Ω	40KΩ	40KΩ	22KΩ	1Ω	37Ω	5 Meg.
2	12SK7GT	0Ω	12Ω	0Ω	6 Meg.	0Ω	40KΩ	25Ω	40KΩ
3	12SQ7GT	0Ω	5 Meg.	0Ω	1 Meg.	1 Meg.	260KΩ	12Ω	0Ω
4	50L6GT	0Ω	37Ω	40KΩ	40KΩ	240KΩ	22KΩ	90Ω	0Ω
5	35W4	INF.	INF.	120Ω	90Ω	130Ω	95Ω	40KΩ	-

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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4718-23

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measure-

MOTOROLA
MODEL 56 x 11

MOTOROLA
MODEL 56 x 11

MOTOROLA 56X11

TRADE NAME	Motorola, Model 56X11 (Ch. HS-94)
MANUFACTURER	Motorola, Inc., 4545 Augusta Blvd., Chicago, Ill.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	538-1720KC RATING .240 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with base of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD to reduce hum modulation.
2	200MMFD	High side to ext. ant. terminal. Low side to B-.	1600KC	1600KC	"	A5	Adjust for maximum output.
3	200MMFD	"	1400KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

MOTOROLA MODEL 56X11 (Ch. HS-94)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	23B75808	TN129	DSB-403020-150	TA-240	PRSA150-40-20	EZ42215	Filter - Red
B	20	150							" - Blue
C	20	150				UT201	PRS150-20		" - Orange
7	.05	400	8S9816	TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
8	.15	200	8A72686	TP417	S-4-2	TC-1	484-.15	DT4P2	Line Isolation
9	.02	400	8S9802	TP423	S-4-02	TC-12	484-02	DT4S2	Output Plate Bypass
10	.005	600	8S9813	TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
11	.005	600	8S9813	TP408	S-6-005	TC-25	684-005	DT6D5	"
12	.05	400	8S9816	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
13	250	500	21R6640	MC240	M0.5-325	1FM-325	1468-00025	5W5T25	AF Plate Bypass
14	500	500		MC245	M0.5-35	1FM-35	1468-0005	5W5T5	Diode RF Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
15A	500KΩ	½	18A72888-1	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 15A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

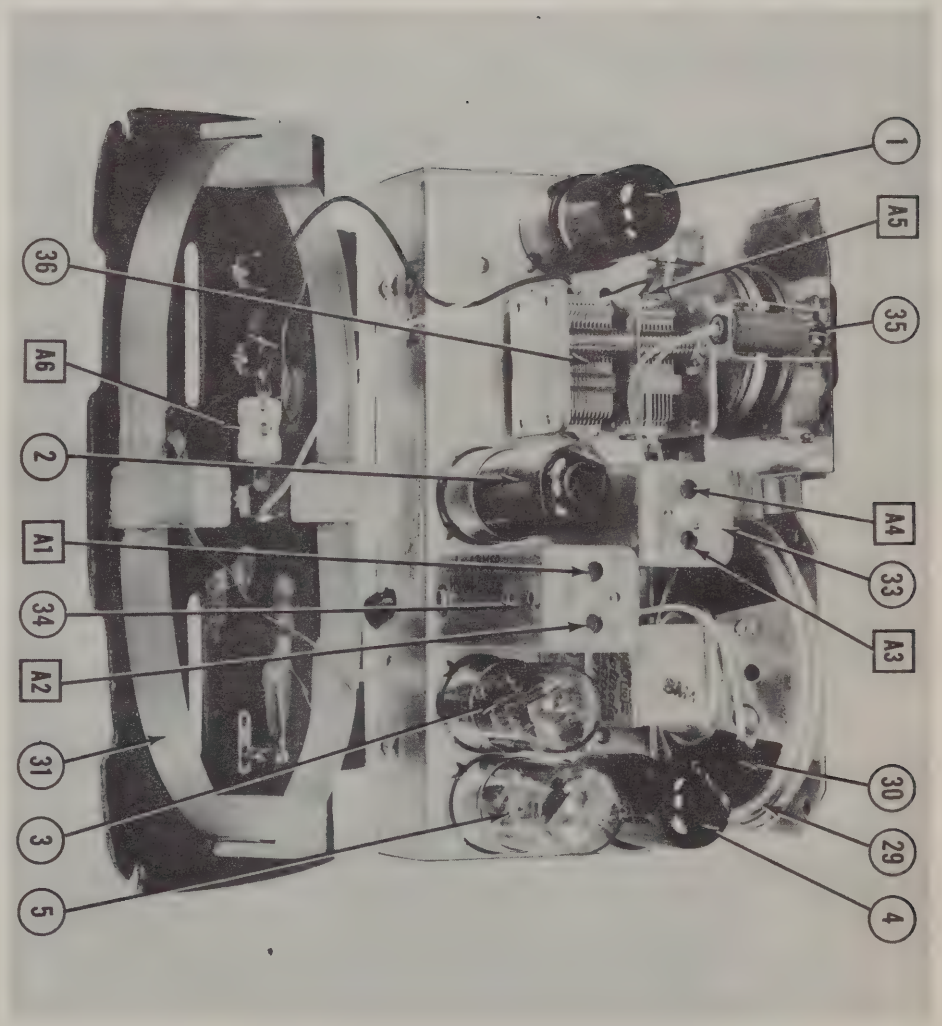
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
16	22KΩ	½	6R6028	BTS-22K	Red-Red-Or. Oscillator Grid
17	220KΩ	½	6R6015	BTS-220K	Red-Red-Yl. Line Isolation
18	1 Meg.	½	6R6004	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
19	39Ω	½	6R2085	BW-½-39	Or.-White-Blk. IF Cathode
20	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode RF Filter
21	4.7 Meg.	½	6R2122	BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
22	220KΩ	½	6R6015	BTS-220K	Red-Red-Yl. AF Plate Load
23	470KΩ	½	6R6032	BTS-470K	Yl.-Vi.-Yl. Output Grid
24	150Ω	½	6R6373	BW-½-150	Br.-Grn.-Br. Output Cathode
25	27Ω	½	6R5683	BW-½-27	Red-Vi.-Blk. Surge Limiter
26	220Ω	1	6R6152	BW-1-220	Red-Red-Br. Filter
27	1200Ω	1	6R3972	BTA-1200	Br.-Red-Red "

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MOTOROLA PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
28	2200Ω	3.4Ω	215Ω	.6Ω	25B20503	A-3976	T22S45	A-2928	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	VC IMP.	MOTOROLA PART No.	JENSEN PART No.		
29	PM	3.4Ω	50B470442	ST-113† Mod. P4-X		†Drill and tap magnet frame.
	CONE DIA.	VC DIA.				
30	4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

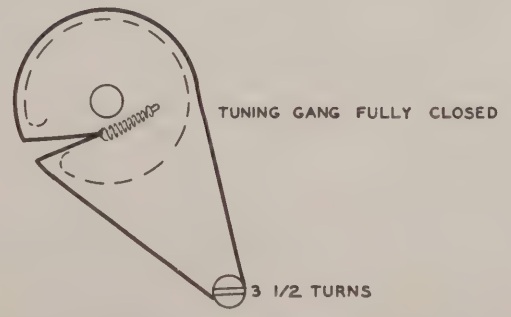
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	
31	Loop Ant.	.1Ω	2Ω	24B470444		
32	Osc. Coil	1Ω	8.5Ω	24A26942	14-1040	Add 50 MMFD from grid to high side tuning cap.
33	Input IF	14Ω	14Ω	1X470471	16-6658	
34	Output IF	11Ω	11Ω	1X470469	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MOTOROLA PART No.		
35	Bayonet	6-8	0.15	Brown			Type 47

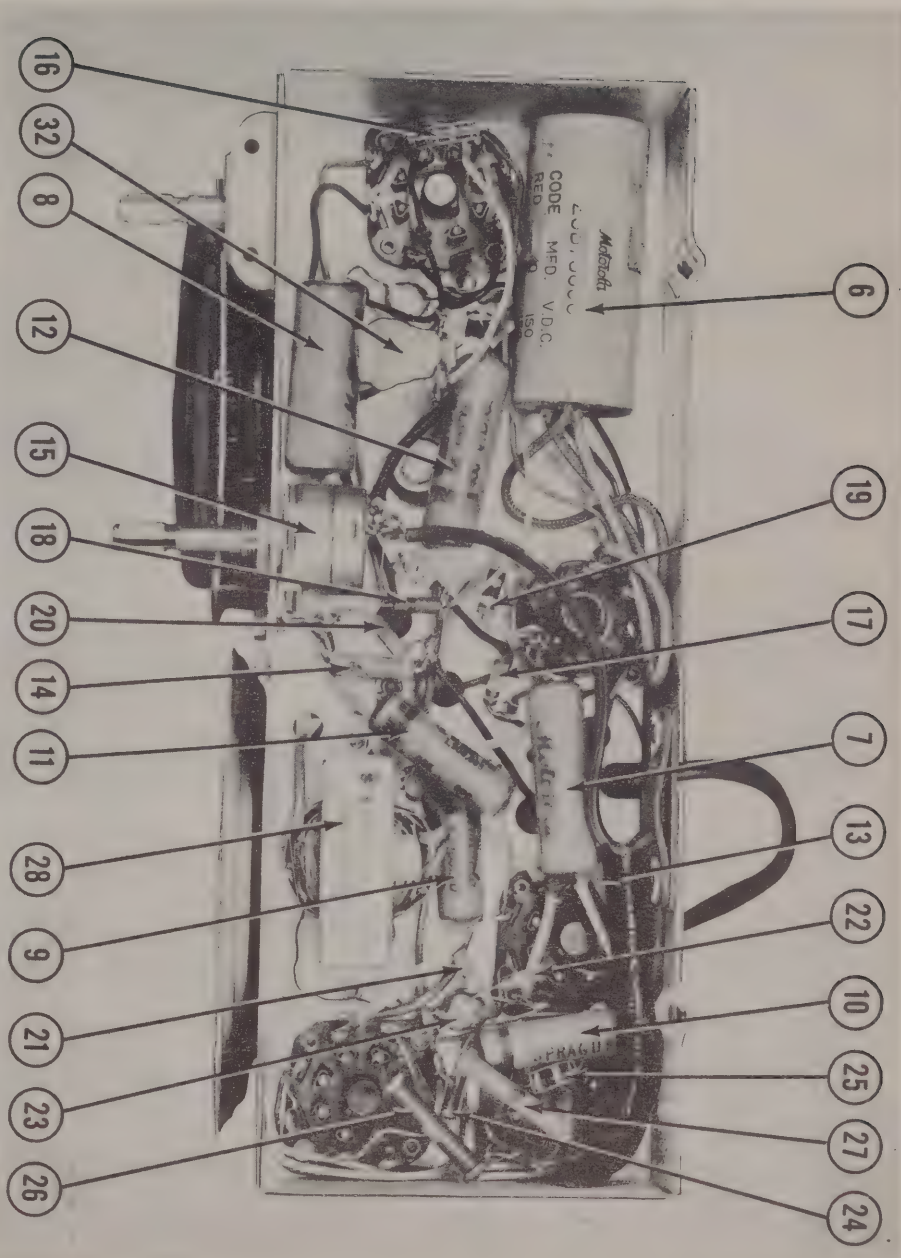
MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
36	2 Gang Var. Cap.	19B20507	17-450 MMF, 30-187 MMF Alternate Pt.#19B31542
A6	Trimmer	20K28424	Ant. Adjustment
	Dial Scale	34B25514	
	Dial Pointer	52B20520	



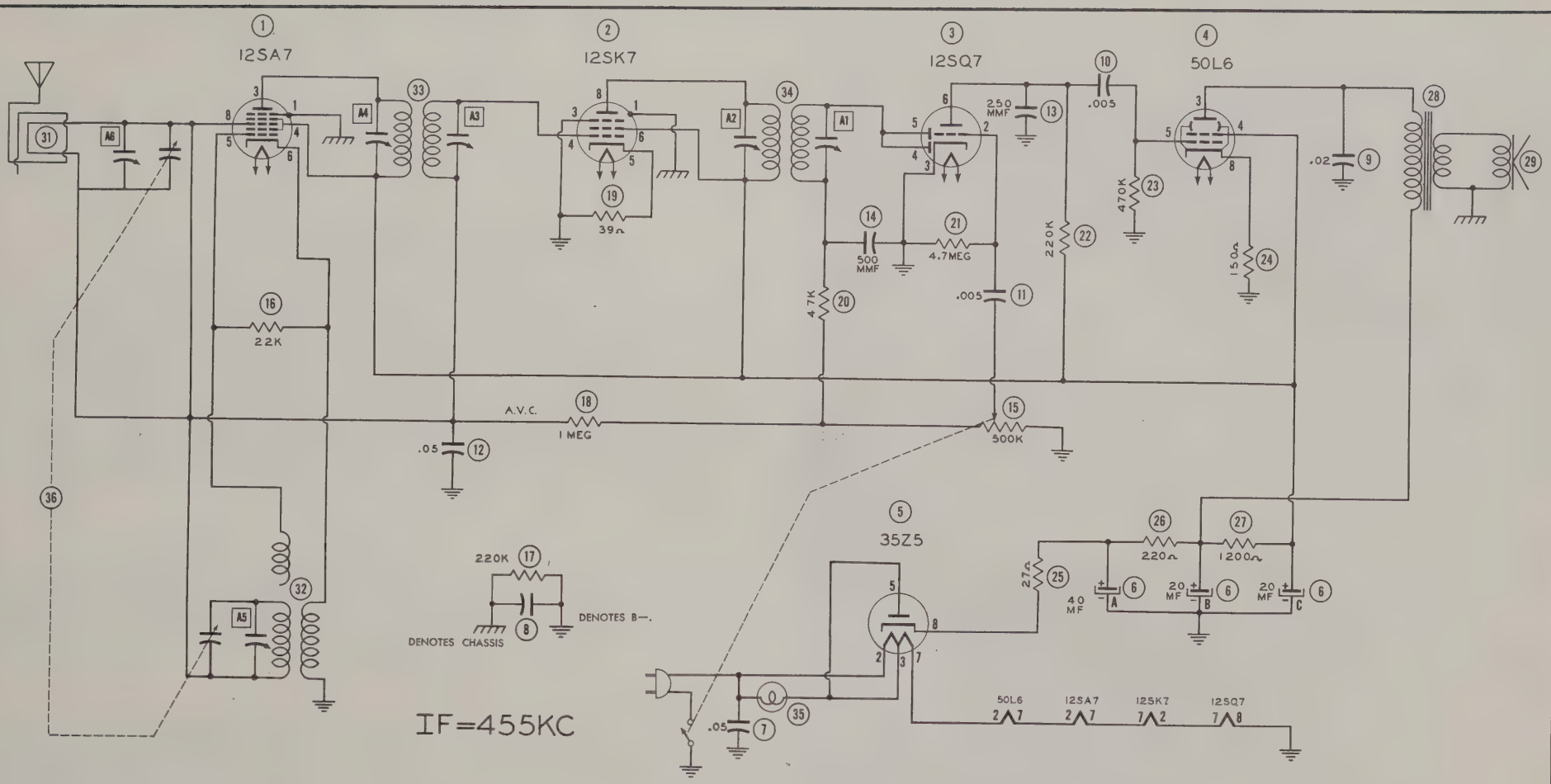
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



DATE 11/47 SET #28 FOLDER #4718-24

MOTOROLA MODEL 56X11 (Ch. HS-94)



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	36VAC	78VDC	78VDC	-12VDC§	0V.	24VAC	-.2VDC
2	12SK7GT	0V.	12VAC	0V.	-.2VDC	.4VDC	78VDC	24VAC	78VDC
3	12SQ7GT	0V.	-.9VDC	0V.	-.6VDC	-.6VDC	62VDC	12VAC	0V.
4	50L6GT	0V.	87VAC	90VDC	78VDC	0V.	0V.	36VAC	5VDC
5	35Z5GT	0V.	117VAC	112VAC	102VDC	112VAC	113VDC	87VAC	115VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	250KΩ	37Ω	60KΩ	60KΩ	22KΩ	1Ω	25Ω	1.5 Meg.
2	12SK7GT	250KΩ	13Ω	0Ω	1.5 Meg.	38Ω	60KΩ	25Ω	60KΩ
3	12SQ7GT	250KΩ	4 Meg.	0Ω	500KΩ	500KΩ	280KΩ	13Ω	0Ω
4	50L6GT	250KΩ	85Ω	60KΩ	60KΩ	500KΩ	INF.	37Ω	150Ω
5	35Z5GT	INF.	110Ω	108Ω	60KΩ	108Ω	60KΩ	85Ω	60KΩ

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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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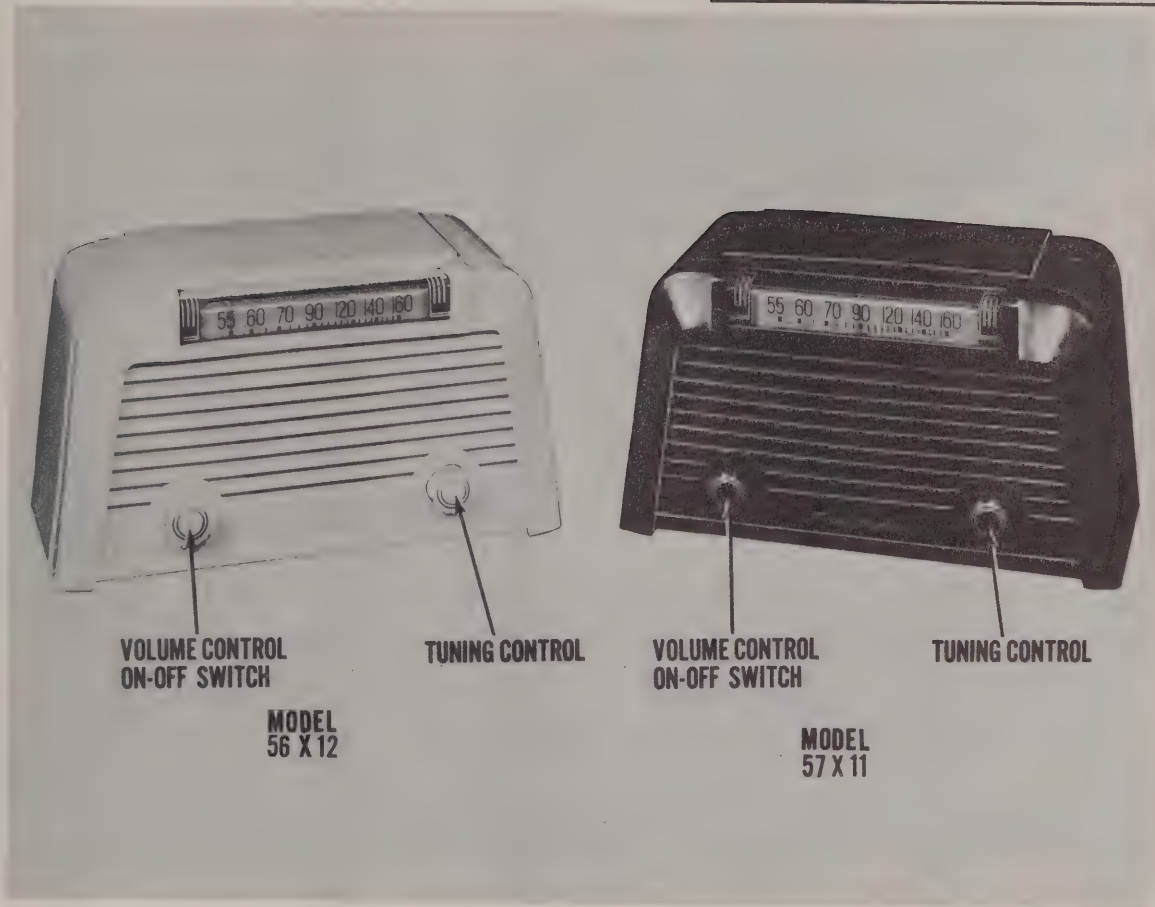
4718-24

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MOTOROLA MODELS
57X11, 57X12, (Ch. HS-60)



MOTOROLA MODELS
57X11, 57X12, (Ch. HS-60)

TRADE NAME	Motorola, Models 57X11, 57X12 (Ch. HS-60)
MANUFACTURER	Motorola, Inc., 4545 W. Augusta Blvd., Chicago 51, Ill.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7 IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	535-1620KC RATING .230 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning capacitor fully closed and set pointer at left hand calibration mark on dial backplate. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2		Loop	1600KC	1600KC calibration mark. (Right hand mark on dial backplate).	"	A5	Adjust for maximum output.
3		"	1400KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

MOTOROLA MODELS 57X11, 57X12 (Ch. HS-60)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	23B75808	TN129	DSB-403020-150	TA-240 UT-201	PRSA-150-20-40	EZ42215	Filter - Red
B	20	150	"						" - Blue
C	20	150					PRS-150-20		" - Orange
7	.02	400	8S9802	TP423	S-4-02	TC-12	484-02	DT4S2	Output Plate Bypass
8	.005	600	8S9813	TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
9	.005	600	8S9813	TP408	S-6-005	TC-25	684-005	DT6D5	" "
10	.05	400	8S9816	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
11	.1	200	8S9806	TP428	S-4-1	TC-1	484-.1	DT4W1	RF Bypass Power Supply
12	.15	200	8A72686	TP417	S-4-1	TC-1	484-.15	DT4W1	Line Isolation
13	.05	400	8S9816	TP426	MPH-6-1	TC-15	484-05	DT4S5	Line Filter
14	250	500	21R6648	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	AF Plate Bypass
15	250	500	21R6648	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Diode RF Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
16A	1 Meg.	½	18A70032	MK402	D13-137	AM-63-2	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 16A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

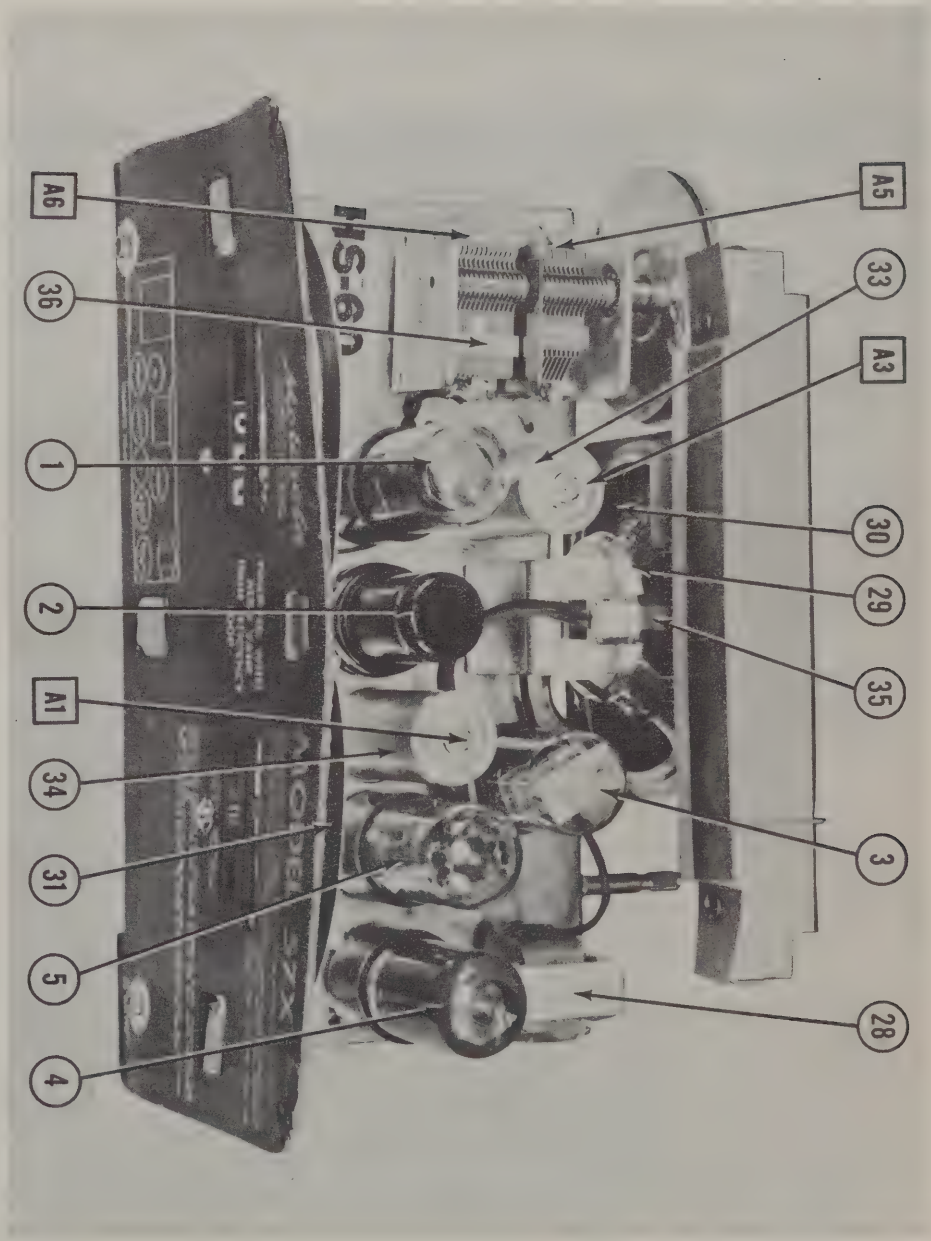
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
17	22KΩ	½	6R6028	BTS-22K	Red-Red-Or. Oscillator Grid
18	220KΩ	½	6R6015	BTS-220K	Red-Red-Yl. Line Isolation
19	1 Meg.	½	6R6004	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
20	39Ω	½	6R2085	BW-½-39	Or.-White-Blk. IF Cathode
21	4.7 Meg.	½	6R2122	BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
22	220KΩ	½	6R6015	BTS-220K	Red-Red-Yl. AF Plate Load
23	470KΩ	½	6R6032	BTS-470K	Yl.-Vi.-Yl. Output Grid
24	150Ω	½	6R6373	BW-½-150	Br.-Grn.-Br. Output Cathode
25	27Ω	½	6R5683	BW-½-27	Red-Vi.-Blk. Rectifier Ballast
26	220Ω	1	6R6152	BW-1-220	Red-Red-Br. Filter
27	1200Ω	1	6R3972	BTA-1200	Br.-Red-Red "

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MOTOROLA PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
28	2100Ω	3.0Ω	260Ω	.8Ω	25B76117	A-3876*	T22S45*	A-2928*	*Drill new mounting holes.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOTOROLA PART No.	JENSEN PART No.		
29	FIELD PM	VC IMP. 3.0Ω	50B76109	ST-113† Mod. P4-X		†Drill and tap magnet frame and fabricate new mounting bracket for dial light.
30	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

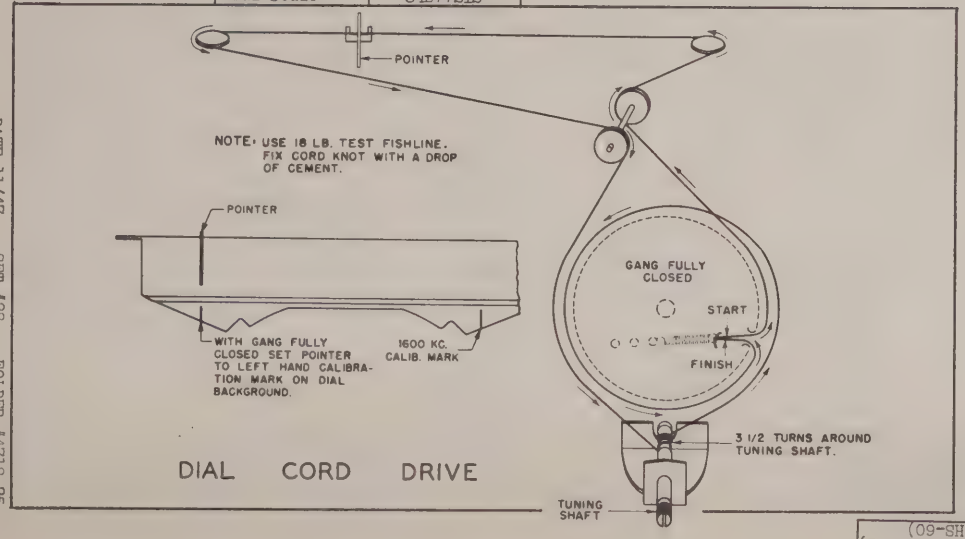
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	
31	Loop Ant.		2Ω	24K77096		
32	Osc. Coil	1Ω	8Ω	24A74616	14-1040	Add 50MMF from grid to high side tuning cap.
33	Input IF	14Ω	14Ω	24B70531	16-6666	
34	Output IF	14Ω	13Ω	24B70533	16-6667	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MOTOROLA PART No.		
35	Bayonet	6-8	0.15	Brown	65X11854		Type 47

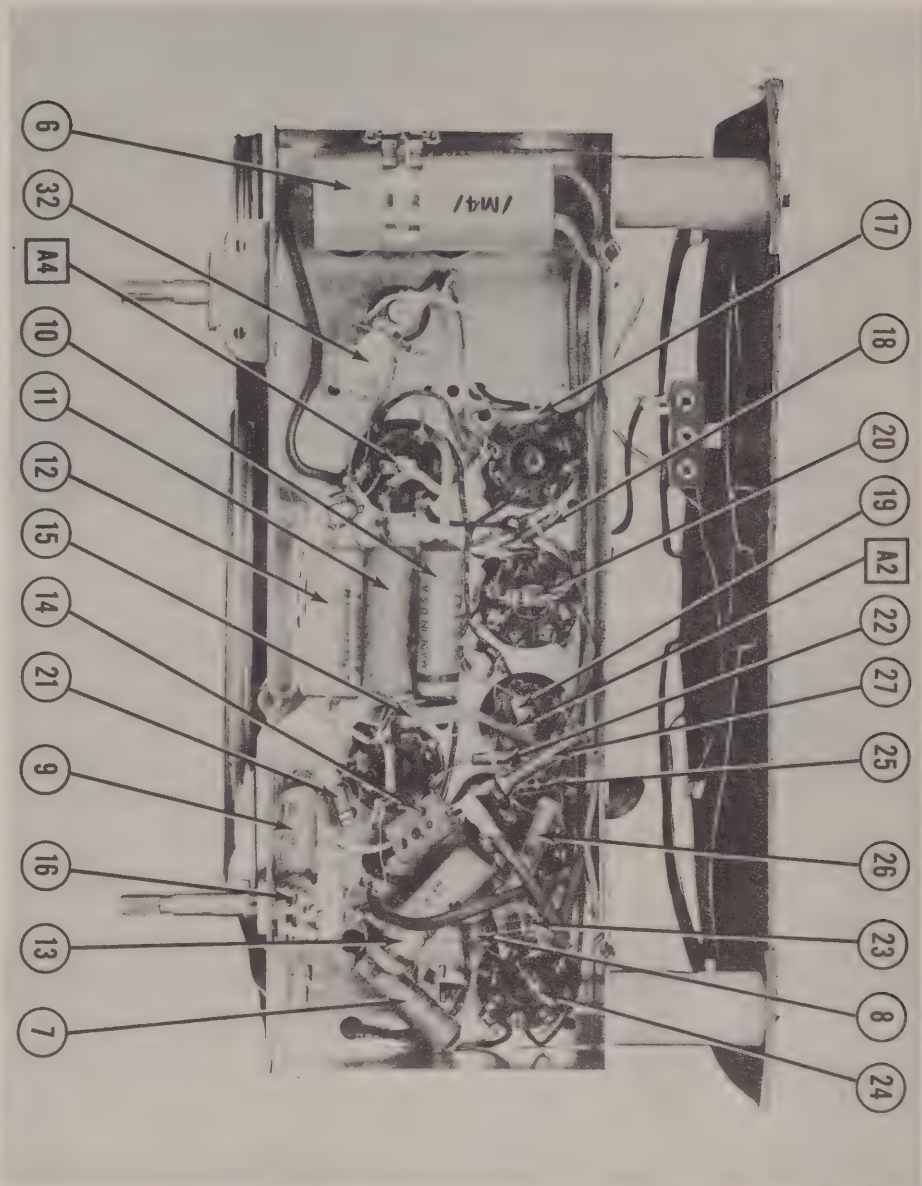
MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
36	2 Gang Var. Cap Dial Pointer Dial Scale	1X77204 52A77089 34B77212	30-440 MMF, 34-200 MMF

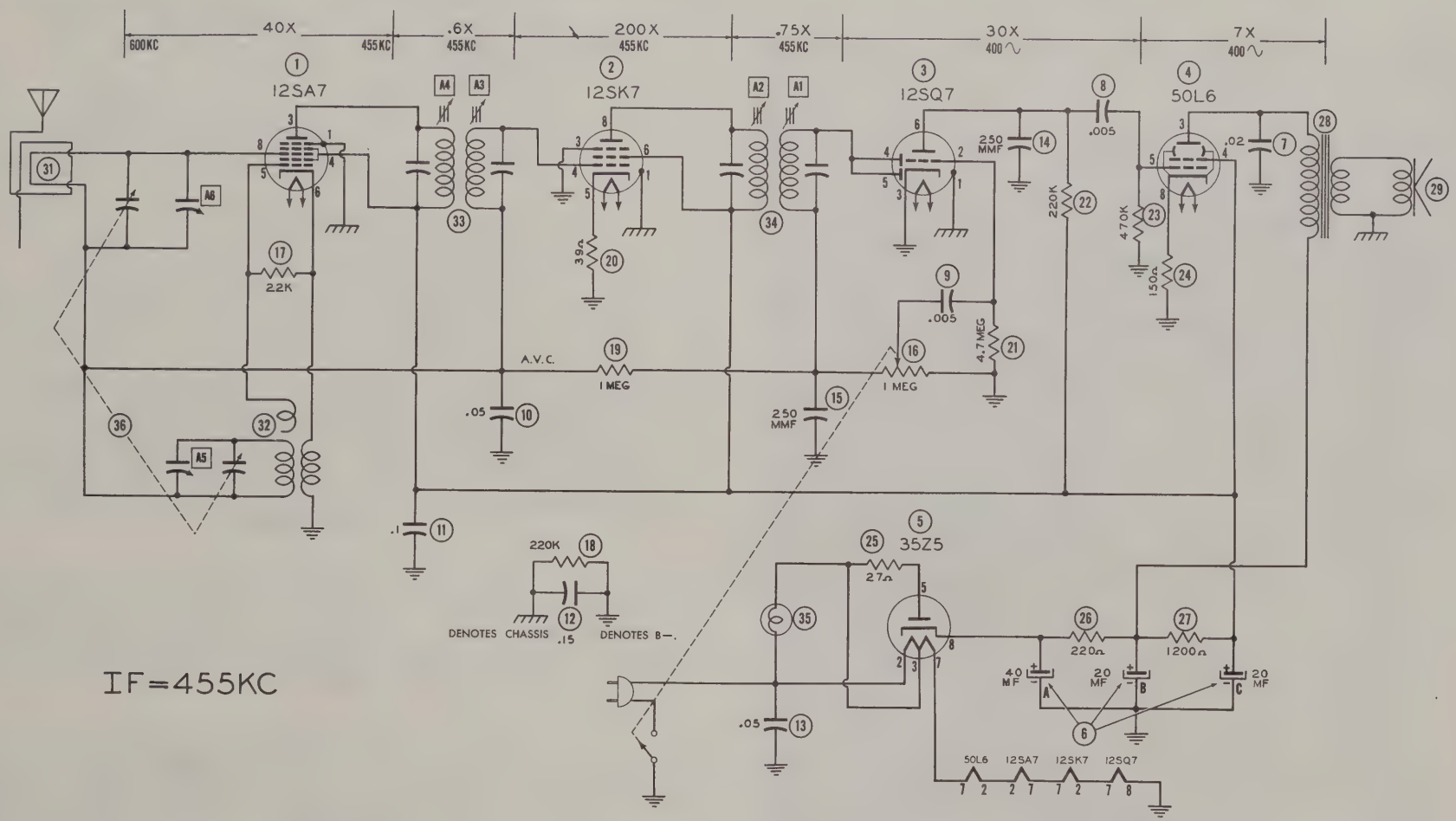

POINTER
NOTE: USE 18 LB. TEST FISHLINE. FIX CORD KNOT WITH A DROP OF CEMENT.
POINTER
WITH GANG FULLY CLOSED SET POINTER TO LEFT HAND CALIBRATION MARK ON DIAL BACKGROUND.
1600 KC. CALIB. MARK
GANG FULLY CLOSED
START
FINISH
3 1/2 TURNS AROUND TUNING SHAFT.
TUNING SHAFT

DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



MOTOROLA MODELS 57X11, S7X12 (Ch. HS-60)



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	38VAC	75VDC	75VDC	-13VDC§	0V.	25VAC	-.2VDC
2	12SK7	0V.	12VAC	0V.	-.2VDC	.4VDC	75VDC	25VAC	75VDC
3	12SQ7GT	0V.	-.9VDC	0V.	-.4VDC	-.4VDC	55VDC	12VAC	0V.
4	50L6GT	0V.	38VAC	93VDC	75VDC	0V.	0V.	82VAC	4.8VDC
5	35Z5GT	0V.	117VAC	112VAC	102VDC	110VAC	0V.	82VAC	110VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	220KΩ	38Ω	60KΩ	60KΩ	22KΩ	1Ω	26Ω	2 Meg.
2	12SK7	220KΩ	13Ω	0Ω	2 Meg.	38Ω	60KΩ	26Ω	60KΩ
3	12SQ7GT	220KΩ	5 Meg.	0Ω	1 Meg.	1 Meg.	280KΩ	13Ω	0Ω
4	50L6GT	INF.	38Ω	60KΩ	60KΩ	480KΩ	0Ω	85Ω	150Ω
5	35Z5GT	INF.	112Ω	110Ω	60KΩ	140Ω	INF.	85Ω	60KΩ

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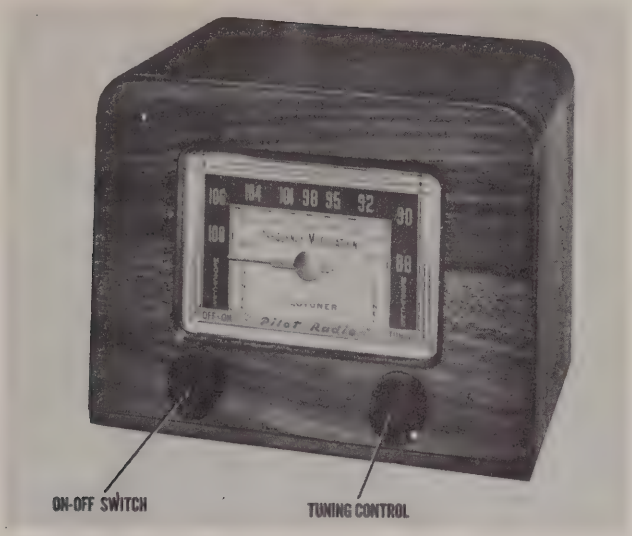
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

4718-25

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**



PILOT MODEL T-601

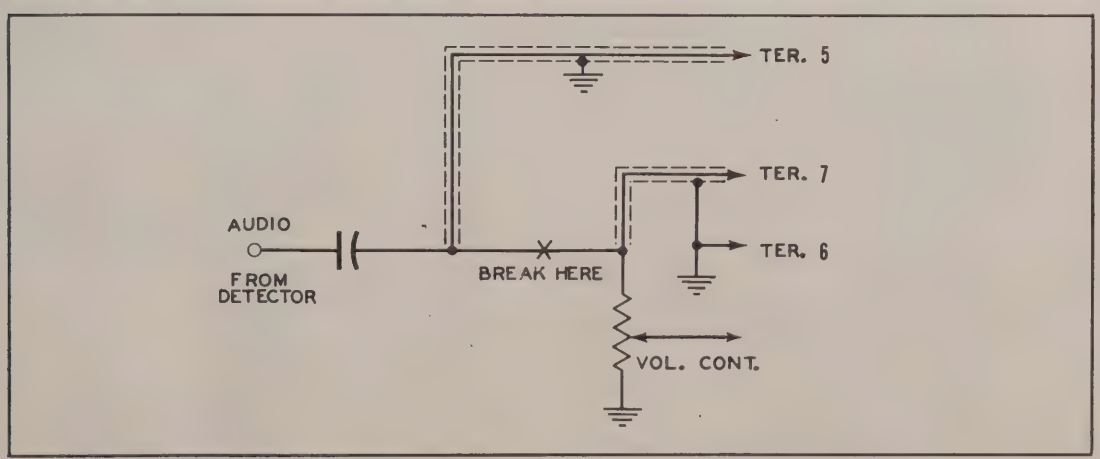
TRADE NAME	Pilot, Model T-601 "Pilotuner"
MANUFACTURER	Pilot Radio Corp., 37-06 36th St., Long Island City, N.Y.
TYPE SET	AC Operated FM Superheterodyne Tuner
TUBES (FIVE)	Types, 6BA6 RF Amp., 6BE6 Converter, 6BA6 1st IF Amp., 6BA6 2nd IF Amp., 6AL5 Ratio Detector.
POWER SUPPLY	110-120 Volts AC
RATING	.270 Amp. @ 117 Volts AC
TUNING RANGE -	FM 88-108MC

INSTALLATION PROCEDURE

Terminals 1, 2 and 3 on terminal board are used for antenna connections only.

On receivers having an external phono socket, plug FM output (Terminals 6 & 7) into phono socket. If phonograph is to be used, connect phono output to terminals 4 and 5 on tuner terminal board. Use shielded cable for all connections and connect shielded side to terminal 4 or 6.

On receivers having no provision for phono input, connect tuner to receiver as shown below.



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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		PILOT PART No.	STANDARD REPLACEMENT		
1	RF Amp.	6EA6	6BA6	7BK	
2	Converter	6BE6	6BE6	7CH	
3	1st IF Amp.	6BA6	6BA6	7BK	
4	2nd IF Amp.	6BA6	6BA6	7BK	
5	Ratio Det.	6AL5	6AL5	6BT	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

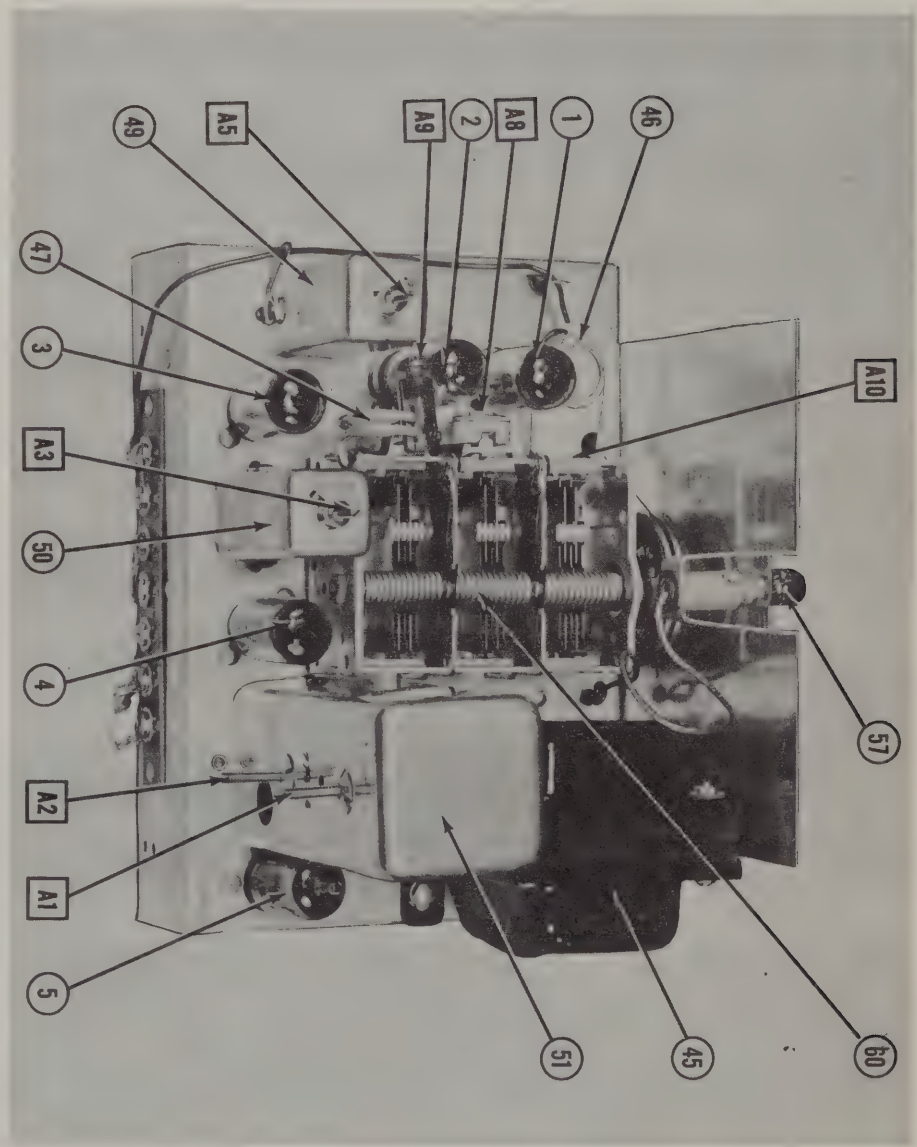
ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	PILOT PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6A	40	150							◓ Filter
B	40	150	24-77						■ "
C	20	150							▲ Decoupling
D	2	150							Stablizing Capacitor
7	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Audio Coupling
8	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	2nd IF Plate Decoupling
9	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Filament Bypass
10	.005	400		TP408	S-6-005	TC-25	484-005	DT6D5	RF Bypass Power Supply
11	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Conv. Plate Decoup.
12	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Conv. Screen Bypass
13	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Filament Bypass
14	.01	400		TP421	LPM-6-01	TC-11	484-01	DT4S1	Line Filter
15	150			MCB236	MOS.5-315		1469-00015	5R5T15	Diode Load Cap. Cer.*
16	1500								Balancing Cap. "
17	1500								2nd IF Screen Bypass Cer
18	1500								2nd IF Grid Filter Cer.
19	1500								1st IF Plate Decoup. "
20	1500								1st IF Screen Bypass "
21	1500								1st IF Grid Filter "
22	1500								Conv. Screen Bypass " †
23	100								Osc. Padder Cer.
24	50			MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Cap. Cer.
25	1500								RF Plate Decoup. Cer.
26	1500								RF Screen Bypass Cer.
27	50			MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	RF Coupling Cer.
28	1500								RF Cathode Bypass Cer.
29	4			MCB205	MOS.5-55	MS-55	1469-00000	5R5V5	Ant. Coupling Silver ‡
30	1500								De-emphasis Cer.

*Some models use 180 MMF. †Not used in all models. ‡ Some models use 10 MMF.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PILOT PART No.	IRC PART No.	
31	68Ω	½		BW-½-68	Blue-Gray-Blk. RF Cathode
32	1000Ω	½		BTS-1000	Br.-Blk.-Red RF Screen Dropping
33	470Ω	½		BTS-470	Yl.-Vi.-Br. RF Plate Decoupling
34	27KΩ	½		BTS-27K	Red-Vi.-Or. Oscillator Grid
35	1000Ω	½		BTS-1000	Br.-Blk.-Red Converter Screen Dropping
36	470Ω	½		BTS-470	Yl.-Vi.-Br. Converter Plate Decoupling
37	270KΩ	½		BTS-270K	Red-Vi.-Yl. 1st IF Grid
38	1000Ω	½		BTS-1000	Br.-Blk.-Red 1st IF Screen Dropping
39	470Ω	½		BTS-470	Yl.-Vi.-Br. 1st IF Plate Decoupling
40	100KΩ	½		BTS-100K	Br.-Blk.-Yl. 2nd IF Grid
41	1000Ω	½		BTS-1000	Br.-Blk.-Red 2nd IF Screen Dropping
42	15KΩ	½		BTS-15K	Br.-Grn.-Or. De-emphasis
43	33KΩ	½		BTS-33K	Or.-Or.-Or. Ratio Detector Load
44	470Ω	2		BT-2-470	Yl.-Vi.-Br. Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PILOT PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
45	117V AC @ .27A	117V AC @ .063A	6.3V AC @ 1.5A		55-13			

R F COILS

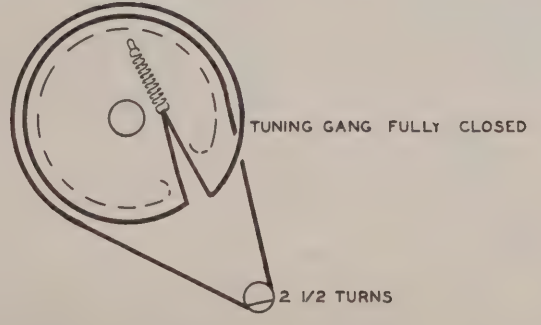
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	PILOT PART No.	MEISSNER PART No.
46	Ant. Coil		0Ω		
47	RF Coil		0Ω		
48	Osc. Coil		0Ω		
49	1st IF	.3Ω	.3Ω	273-117	
50	2nd IF	.3Ω	.3Ω	273-119	
51	Ratio Det.	.3Ω	.3Ω	279-34	
52	RF Choke		.1Ω	75-19	
53	" "		.1Ω	75-19	
54	" "		.1Ω	75-19	
55	" "		.1Ω	75-19	
56	" "		.1Ω	75-19	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					PILOT PART No.		
57	Bayonet	6-8	0.15	Brown			Type 47

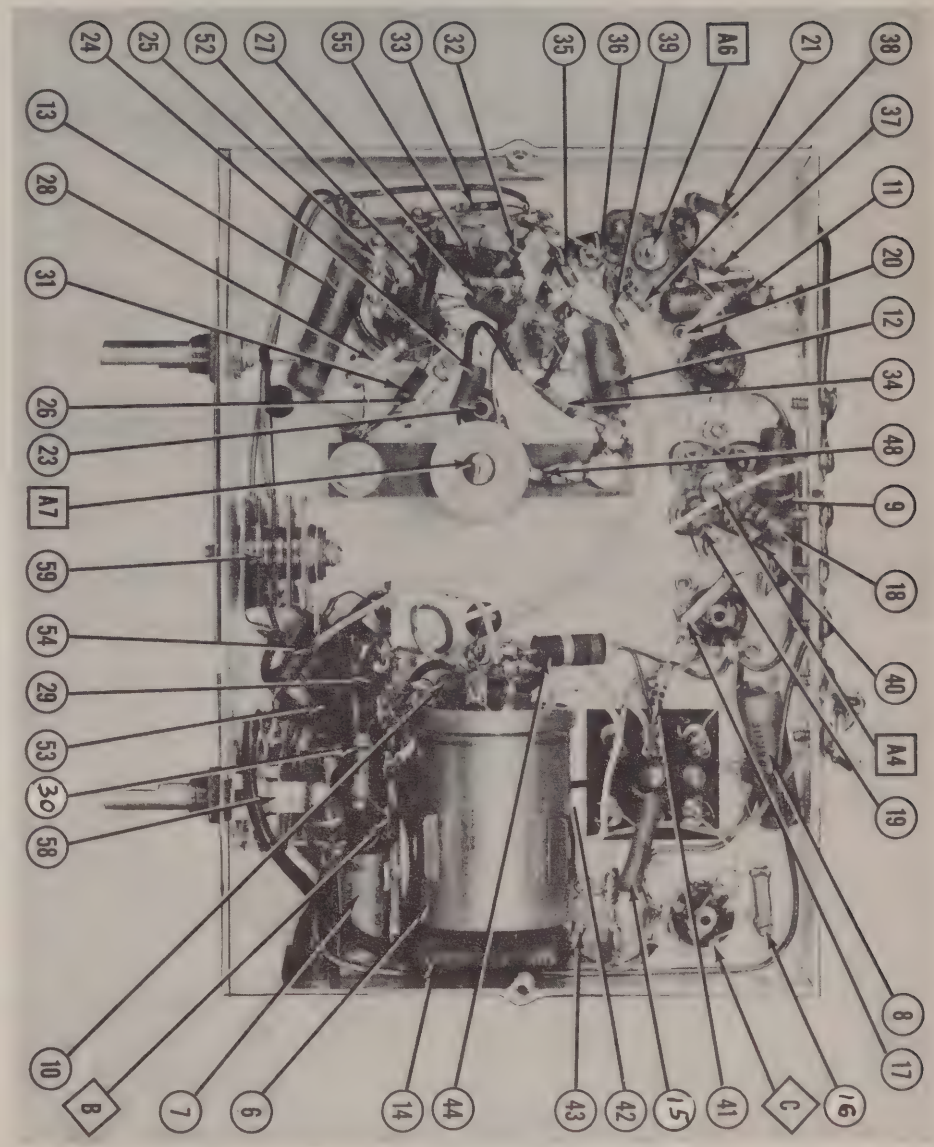
MISCELLANEOUS

ITEM No.	PART NAME	PILOT PART No.	NOTES
58	Switch	110-318	On-Off
59	Rectifier		Selenium
60	Tuning Capacitor		



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



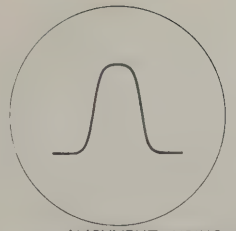
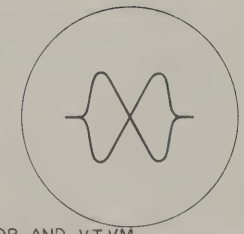


FIGURE A

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with base of dial. Alignment should not be attempted until receiver has warmed up for at least 30 minutes. Use insulated alignment screwdriver for adjusting.

FIGURE B



ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

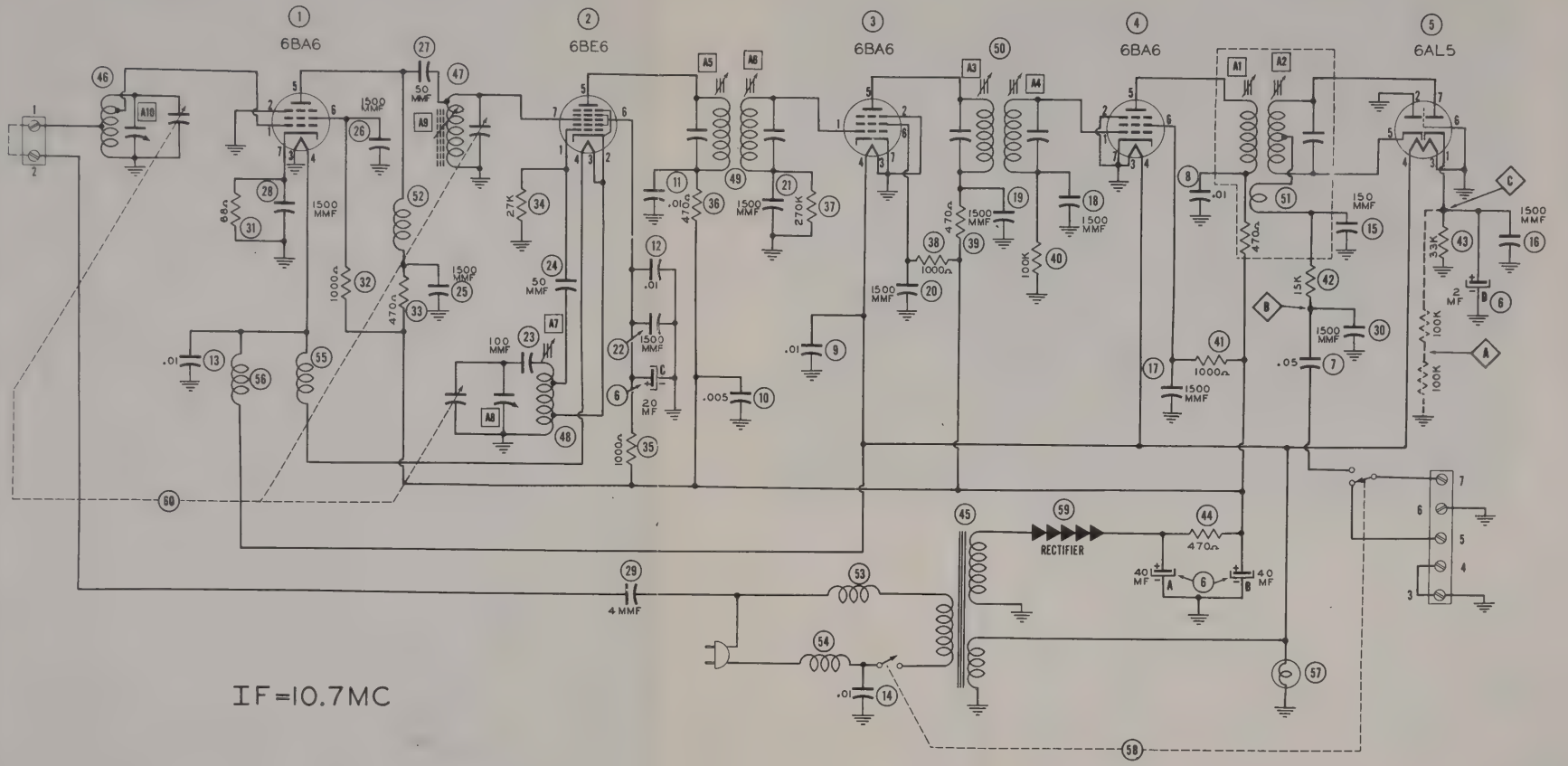
Frequency modulate signal with 60~, 450KC sweep. Use 120~ sawtooth for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1	.01 MFD.	High side to Pin 1 (grid) of 6BA6 2nd IF Tube (4). Low side to chassis.	10.7MC (freq. mod.)	88MC	Vertical input to point C. Ground to chassis.	A1	Disconnect 2 MFD cap from point C. Adjust for maximum amplitude, symmetry and coincidence per pattern A.
2	.01 MFD.	High side to Pin 1 (grid) 6BA6 1st IF Tube (3). Low side to chassis.	"	"	"	A3,A4	Adjust for maximum amplitude, symmetry and coincidence per pattern A.
3	.01 MFD.	High side to Pin 7 (grid) 6BE6. Low side to chassis.	"	"	"	A5,A6	Adjust for maximum amplitude, symmetry and coincidence per pattern A. Reconnect 2 MFD cap at point C.
4	.01 MFD.	High side to Pin 1 (grid) of 6BA6 2nd IF Tube (4). Low side to chassis.	"	"	Vertical input to point B. Ground to chassis.	A2	Adjust for maximum straightness of the crossover lines with the crossover in center of pattern per figure B.
5	300Ω carbon res.	Disconnect jumper from terminals 1 & 2. High side to ext. ant. terminal. Low side to chassis.	90MC (freq. mod.)	"	Vertical input to point C. Ground to chassis.	A7	Disconnect 2 MFD cap. from point C. Adjust for coincidence of pattern A.
6	"	"	106MC (freq. mod.)	106MC	"	A8	Adjust for coincidence. Repeat Steps 5 & 6 until no further improvement can be made.
7	"	"	90MC (freq. mod.)	Tune for coincidence.	"	A9	Adjust for maximum amplitude.
8	"	"	106MC (freq. mod.)	"	"	A10	" " " "

ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

The values of the two 100KΩ resistors connected in Step 1 should be within 1% of each other.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1	.01 MFD.	High side to Pin 7 (grid) 6BE6. Low side to chassis.	10.7MC	88MC	Connect two 100KΩ resistors in series as shown on schematic. DC probe of VTVM to point C. Common lead to chassis.	A1,A2, A3,A4, A5,A6.	Adjust for maximum deflection in order given and then repeat.
2	.01 MFD.	"	10.7MC	"	DC probe of VTVM to point A. Common lead to point B.	A2	Use a zero center scale meter if available. Adjust for zero reading. Remove two 100KΩ resistors.
3	300Ω carbon resistor.	Disconnect jumper from terminals 1 & 2. High side to ext. ant. terminal. Low side to chassis.	90MC	90MC	DC probe to point C. Common lead to chassis.	A7	Adjust for maximum deflection.
4	"	"	106MC	106MC	"	A8	Adjust for maximum deflection. Repeat Steps 3 & 4 until no further improvement can be made.
5	"	"	90MC	Tune for maximum deflection.	"	A9	Adjust for maximum deflection.
6	"	"	106MC	"	"	A10	" " " "



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	6BA6	0V.	0V.	0V.	6.3VAC	95VDC	95VDC	1VDC
2	6BE6	1.8VDC§	0V.	0V.	6.3VAC	100VDC	93VDC	0V.
3	6BA6	-.5VDC	0V.	0V.	6.3VAC	95VDC	95VDC	0V.
4	6BA6	-.5VDC	0V.	0V.	6.3VAC	95VDC	95VDC	0V.
5	6AL5	0V.	0V.	0V.	6.3VAC	0V.	0V.	0V.

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	6BA6	0Ω	0Ω	0Ω	.2Ω	60KΩ	60KΩ	65Ω
2	6BE6	27KΩ	0Ω	0Ω	.3Ω	60KΩ	60KΩ	0Ω
3	6BA6	260KΩ	0Ω	0Ω	.1Ω	60KΩ	60KΩ	0Ω
4	6BA6	100KΩ	0Ω	0Ω	.1Ω	60KΩ	60KΩ	0Ω
5	6AL5	30KΩ	0Ω	0Ω	.1Ω	INF.	0Ω	INF.

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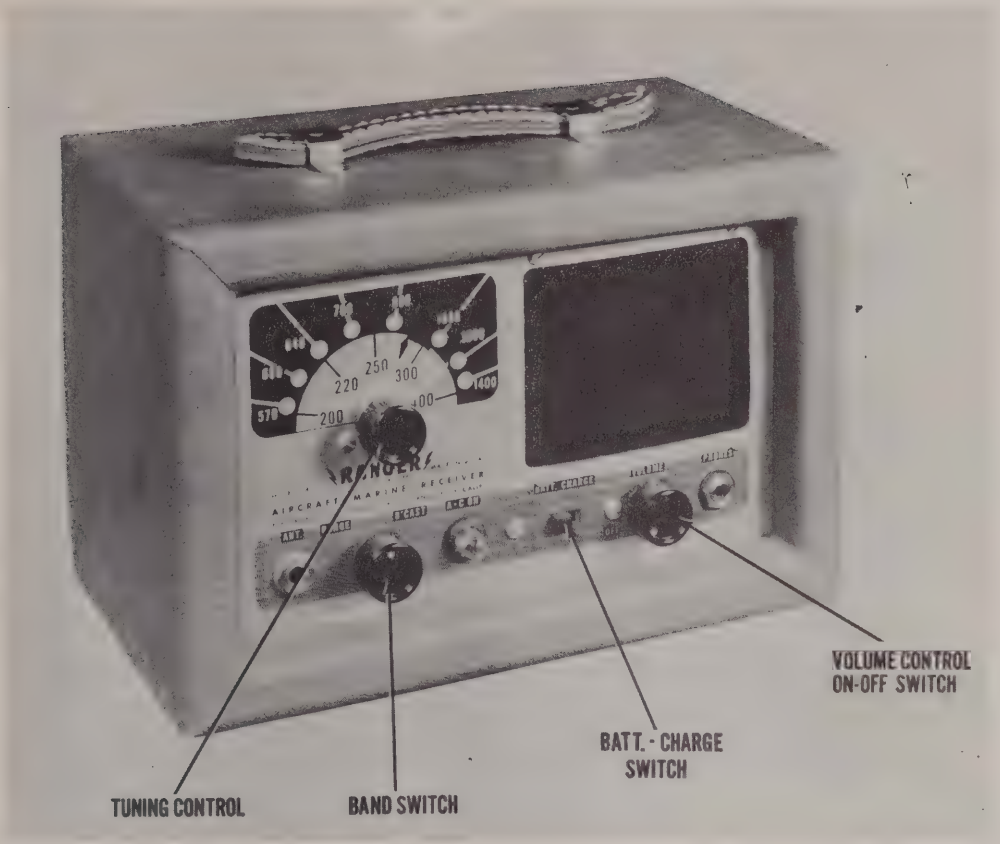
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

4718-26

RANGER MODEL 118
BATTERY OPERATED



RANGER MODEL 118
BATTERY OPERATED

RANGER MODEL 118

TRADE NAME	Ranger, Model 118
MANUFACTURER	Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.
TYPE SET	Three Power Portable Superheterodyne Aircraft-Marine Receiver with Loop Antenna
TUBES (FIVE)	Types, 1T4 RF Amp., 1R5 Converter, 1T4 IF Amp., 1S5 Det.-AVC-AF, 3Q4 Power Output.
POWER SUPPLY RATINGS	110 - 120 Volts AC-DC or 4½ Volt "A" Supply & 67½ Volt "B" Supply .280 Amp. @ 117 Volts AC or 112MA @ 4.5 Volts DC & 15MA @ 67.5 Volts DC

TUNING RANGE—BROADCAST 550-1550KC LONG WAVE 195-410KC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	100MMFD	High side to Pin 6 (grid) of 1R5. Low side to B-.	150KC	Range position	200KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
2	100MMFD	High side to ant. plug. Low side to B-.	550KC	BC	Tuning cap. fully closed	"	A5,A6	" " " "
3	100MMFD	"	1550KC	"	Tuning cap. fully open.	"	A7,A8	Adjust for maximum output Repeat Steps 2 & 3 until no further improvement can be made.
4	100MMFD	"	200KC	Range	200KC	"	A9,A10	Adjust for maximum output
5	100MMFD	"	400KC	"	400KC	"	A11, A12	Adjust for maximum output Repeat Steps 4 & 5 until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

RANGER MODEL 113
FACTORY SER. NO.

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		RANGER PART No.	STANDARD REPLACEMENT		
1	RF Amp.	1T4	1T4	6AR	
2	Converter	1R5	1R5	7AT	
3	IF Amp.	1T4	1T4	6AR	
4	Det.-AVC-AF	1S5	1S5	6AU	
5	Power Output	3Q4	3Q4	7BA	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	RANGER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6A	50	150		2N520	DSB-5030-150	TA-530	PRSA-150-30-50	BRL53150	Filter - Green
B	30	150							" - Red
7	10	50		TC32	M-10-50	TA-510	PRS-50-10	BR105	Filament Bypass
8	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	AF Screen Bypass
9	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Phono Coupling
10	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Isolation
11	.05	400		TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
12	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Phone Isolation
13	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
14	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Screen Bypass
15	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	RF Bypass Power Supply
16	1000			MC255	MO.5-21	1FM-21	1468-001	2R5D1	Output Plate Bypass
17	100			MC235	MO.5-31	1FM-31	1468-0001	5R5T1	AF Plate Bypass
18	1000			MC255	MO.5-21	1FM-21	1468-001	2R5D1	Audio Coupling
19	100			MC235	MO.5-31	1FM-31	1468-0001	5R5T1	Diode RF Filter
20	500			MC245	MO.5-35	1FM-35	1468-0005	5R5T5	Audio Coupling
21	100			MC235	MO.5-31	1FM-31	1468-0001	5R5T1	Diode RF Filter
22	250			MC240	MO.5-325	1FM-325	1468-00025	5R5T25	RF Coupling
23	50			MC225	MO.5-45	1FM-45	1468-00005	5R5Q5	Osc. Grid
24	500			MC245	MO.5-35	1FM-35	1468-0005	5R5T5	Fixed Padder

*Do not use bypass section.

CONTROLS

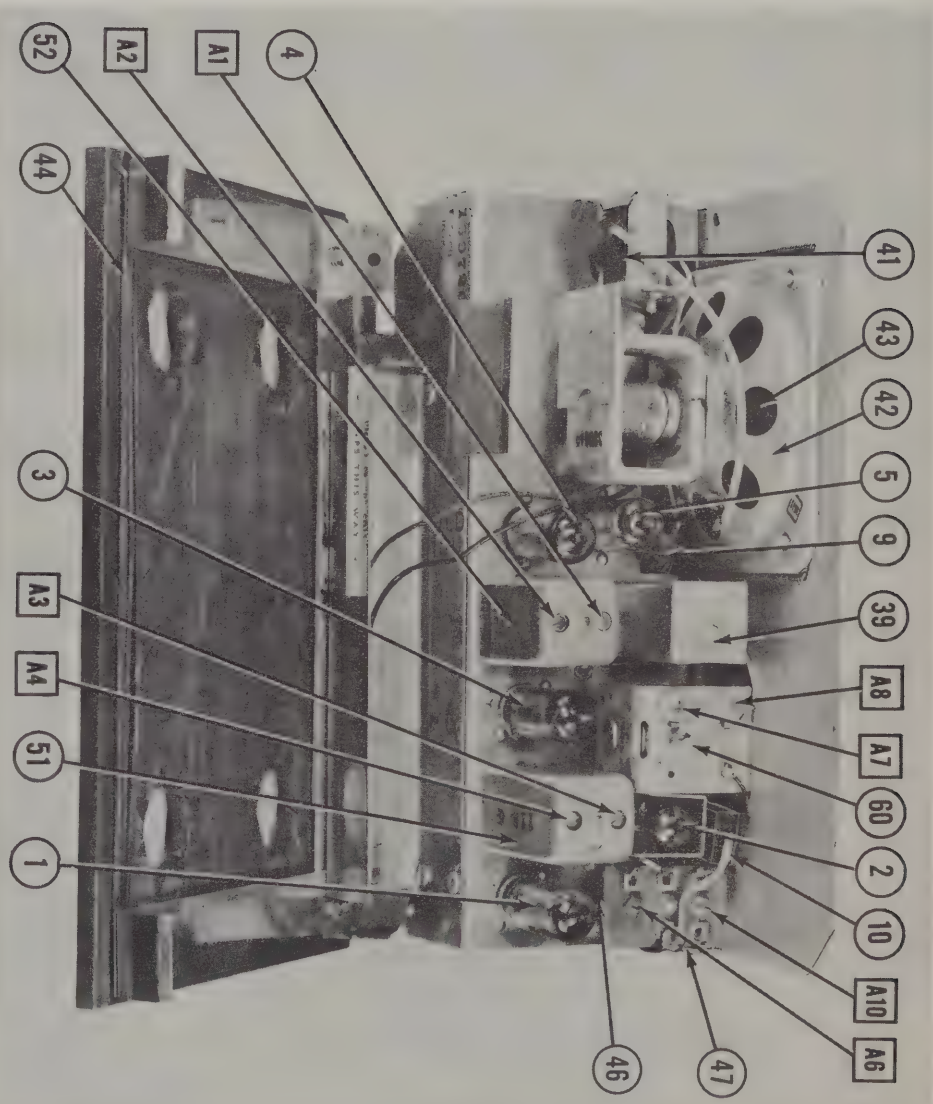
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	RANGER PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
25A	100KΩ	½		MR41	D11-128	M-40-S	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 25A per instructions
C	Switch			M27	42	SW-A2	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	RANGER PART No.	IRC PART No.	
26	500KΩ	1/3		BTS-470K	Grn.-Blk.-Yl. Converter Grid
27	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. Oscillator Grid
28	5600Ω	1		BTA-5600	Grn.-Blue-Red Decoupling
29	2 Meg.	1/3		BTS-2.2 Meg.	Red-Blk.-Grn. AVC Network
30	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. Diode Filter
31	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. Diode Load
32	5 Meg.	1/3		BTS-4.7 Meg.	Grn.-Blk.-Grn. AF Grid
33	5 Meg.	1/3		BTS-4.7 Meg.	Grn.-Blk.-Grn. AF Screen Dropping
34	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
35	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. Output Grid
36	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. Series Neon Indicator
37	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. Line Isolation
38	20Ω	1		BW-1-22	Red-Blk.-Blk. Rectifier Ballast
39	1000Ω	10		AB-1000	Br.-Blk.-Red Filament Dropping
40	2700Ω	1		BTA-2700	Red-Vi.-Red Filter
61	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. RF Coil Shunt-See Note 1
62	220KΩ	1/3		BTS-220K	Red-Red-Yl. Input IF Pri. Shunt-See Note 1

Note 1-Not used in all models

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		RANGER PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
41	9400Ω	3.5Ω	900Ω	.6Ω	980	A-8879†	T2S847†	A-2932†	†Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			RANGER PART No.	JENSEN PART No.		
42	FIELD	VC IMP.		ST-113		
	PM	3.5Ω		Mod. P4-X		
	CONE DIA.	VC DIA.				
43	4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	RANGER PART No.	MEISSNER PART No.	
44	Loop Ant.		.2Ω			
45	Ant.Load. Coil		27Ω	118-1		
46	BC Ant.Coil		8Ω	118-2		Items 46 & 47 mounted on same assembly.
47	LW Ant.Coil		1Ω			
48	RF Coil		46Ω	118-3		
49	BC Osc. Coil	1Ω	4Ω	11c-4		
50	LW Osc. Coil	1.2Ω	9Ω	11c-5		
51	Input IF	46Ω	53Ω	11c-6		
52	Output IF	60Ω	60Ω	11c-7		

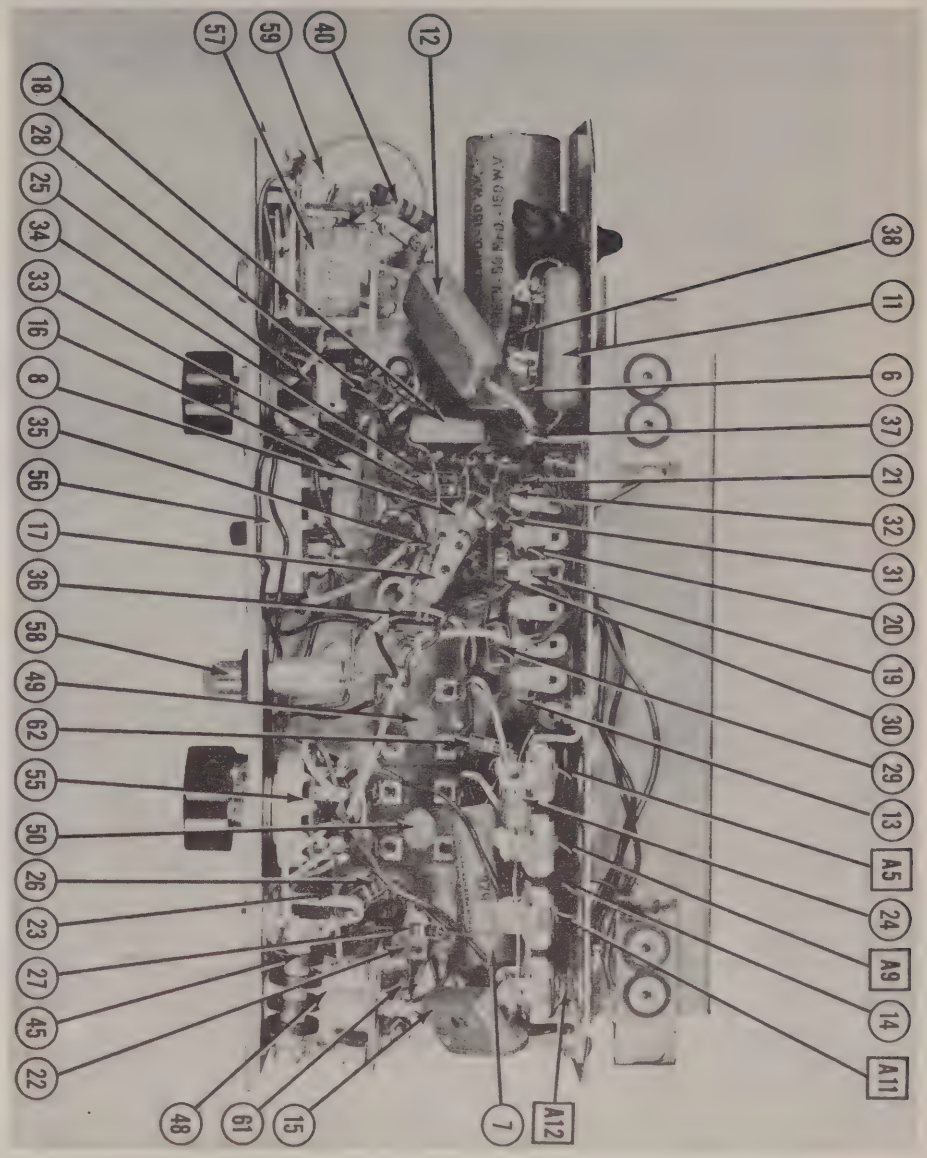
BATTERIES

ITEM No.	VOLTAGE	RANGER PART No.	EVEREADY			INSTALLATION NOTES
			"A"	"B"	"A-B"	
53	4½V "A"		(3)#950			3 Used in series
54	67½V "B"			#467		

MISCELLANEOUS

ITEM No.	PART NAME	RANGER PART No.	NOTES
55	Bandswitch		
56	Switch		Battery-Charge
57	Relay		
58	Neon Indicator		
59	Rectifier		Selenium
60	2 Gang Var. Cap.		20-378 MMF (each section)

CHASSIS—BOTTOM VIEW



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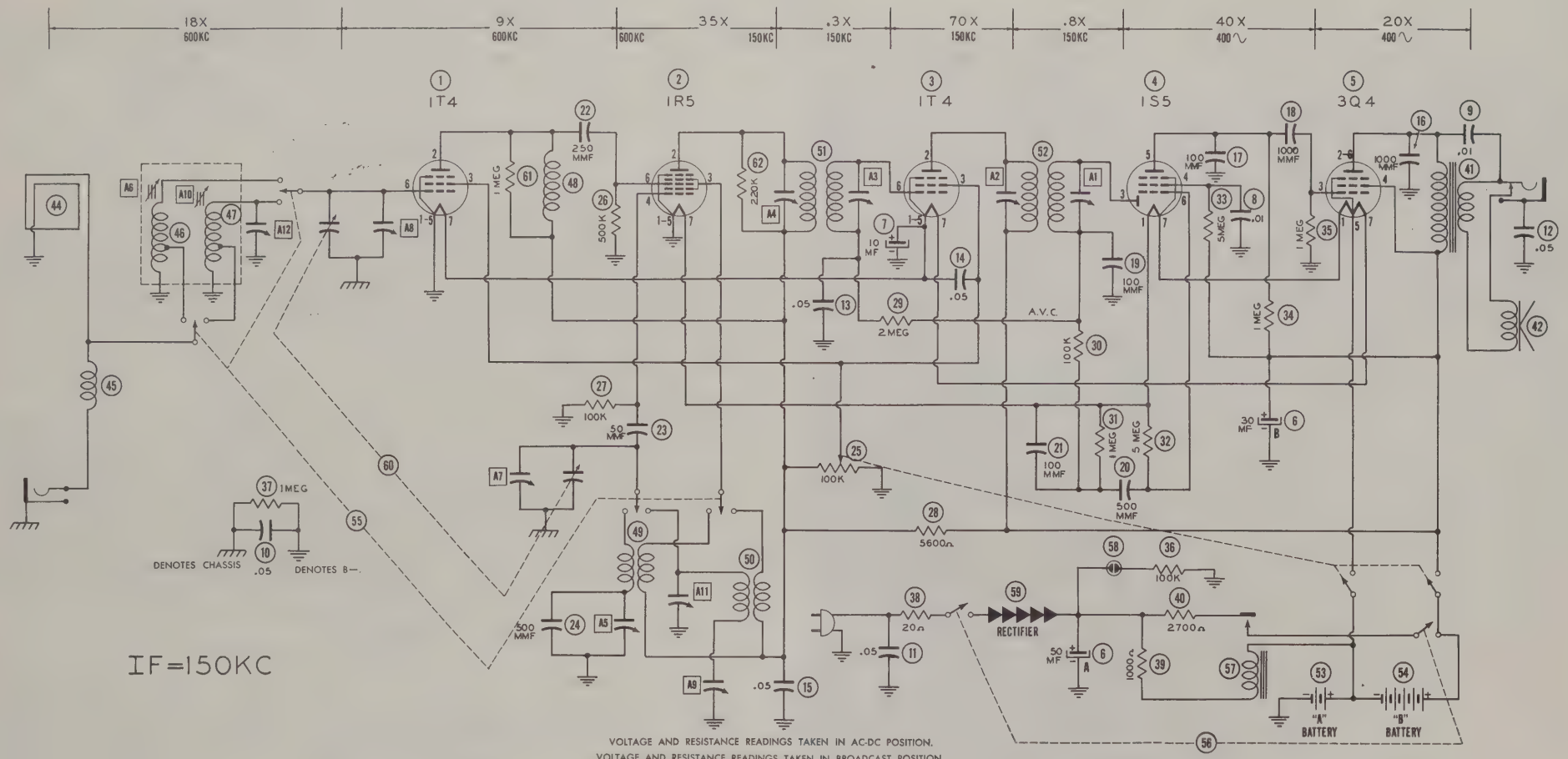

VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.
VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	1T4	0V.	40VDC	40VDC	0V.	0V.	0V.	1.6VDC
2	1R5	0V.	40VDC	40VDC	-5.2VDC§	0V.	0V.	1.7VDC
3	1T4	1.6VDC	73VDC	40VDC	0V.	1.6VDC	.1VDC	3.3VDC
4	1S5	1.7VDC	0V.	.2VDC	11VDC	22VDC	.1VDC	3.3VDC
5	3Q4	3.3VDC	67VDC	0V.	73VDC	4.8VDC	67VDC	3.3VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	1T4	0Ω.	55KΩ	55KΩ	INF.	0Ω	8Ω	*
2	1R5	0Ω	55KΩ	55KΩ	100KΩ	0Ω	500KΩ	*
3	1T4	*	50KΩ	55KΩ	INF.	*	3.5 Meg.	*
4	1S5	*	INF.	1.2 Meg.	5 Meg.	1 Meg.	5 Meg.	*
5	3Q4	*	50KΩ	1 Meg.	50KΩ	*	50KΩ	*

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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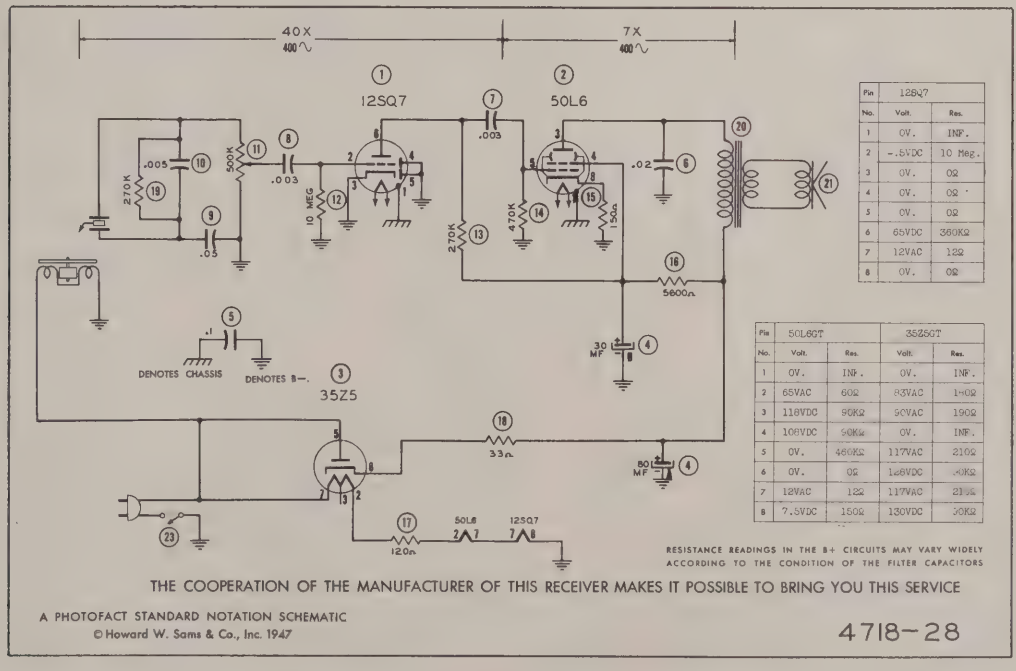
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is shorted to Pin #1 of the 1S5 Tube during stage gain measurements.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

RCA VICTOR MODEL
63E (Ch. RS-127)

RCA MODEL 63E

TRADE NAME	RCA Victor, Model 63E (Ch. RS-127)
MANUFACTURER	Radio Corp. of America, RCA Victor Div., Camden, N.J.
TYPE SET	AC Operated 3 Tube Record Player with Speaker
TUBES (THREE)	Types, 12SQ7 AF Amp., 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC RATING .220 Amp. @ 117V AC



Pin No.	12SQ7 Volt.	12SQ7 Res.
1	0V.	INF.
2	-.5VDC	10 Meg.
3	0V.	0Ω
4	0V.	0Ω
5	0V.	0Ω
6	65VDC	360KΩ
7	12VAC	12Ω
8	0V.	0Ω

Pin No.	50L6GT Volt.	50L6GT Res.	35Z5GT Volt.	35Z5GT Res.
1	0V.	INF.	0V.	INF.
2	65VAC	60Ω	83VAC	140Ω
3	118VDC	90KΩ	90VAC	190Ω
4	108VDC	90KΩ	0V.	INF.
5	0V.	460KΩ	117VAC	210Ω
6	0V.	0Ω	128VDC	.40KΩ
7	12VAC	12Ω	117VAC	210Ω
8	7.5VDC	150Ω	130VDC	30KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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4718-28

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Amp.	12SQ7	12SQ7	8Q	
2	Power Output	50L6GT	50L6GT	7AC	
3	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4A	80	150	72312	2N511†	DSB-8040-150	TA-440†	PRSA150-80-	BRD4415†	Filter - Green
B	30	150		TC47		UT-301	40	BR3015	" - Blue
5	.1	400	70617	TP428	S-4-1	TC-1	484-.1	DT4P1	Line Isolation
6	.02	400	70611	TP423	S-4-02	TC-12	484-02	DT4S2	Output Plate Bypass
7	.003	600	70603	TP406	S-6-003	TC-23	684-003	DT6D3	Audio Coupling
8	.003	600	70603	TP406	S-6-003	TC-23	684-003	DT6D3	" "
9	.05	400	70615	TP426	S-4-05	TC-15	484-05	DT4S5	Phono Isolation
10	.005	200	70606	TP408	S-6-005	TC-25	484-005	DT6D5	Tone Comp.

†Parallel sections to obtain desired capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
11	500KΩ	½	72000				Volume Control & Sw.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	IDENTIFICATION CODES
12	10 Meg.	½	30992	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
13	270KΩ	½	30651	BTS-270K	Red-Vi.-Yl. AF Plate Load
14	470KΩ	½	30648	BTS-470K	Yl.-Vi.-Yl. Output Grid
15	150Ω	½	30880	BW-½-150	Br.-Grn.-Br. Output Cathode
16	5600Ω	1	30734	BTA-5600	Grn.-Blue-Red Filter
17	120Ω	5	72314	ABA-150	Line Dropping - See Note
18	33Ω	1	72313	BW-1-33	Or.-Or.-Blk. Surge Limiter
19	270KΩ	½	30651	BTS-270K	Red-Vi.-Yl. Tone Compensation

Note-On IRC replacement set slider at 120Ω from one end.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: RCA PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
20	2100Ω	3.7Ω	230Ω	.9Ω	72535	A-3876	T22S45	A-2928	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: RCA PART No.	JENSEN PART No.		INSTALLATION NOTES
21	FIELD PM	VC IMP. 3.7Ω	72201	ST-105‡ Mod. P5-X		‡Drill and tap magnet frame.
22	CONE DIA. 4½"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

MISCELLANEOUS

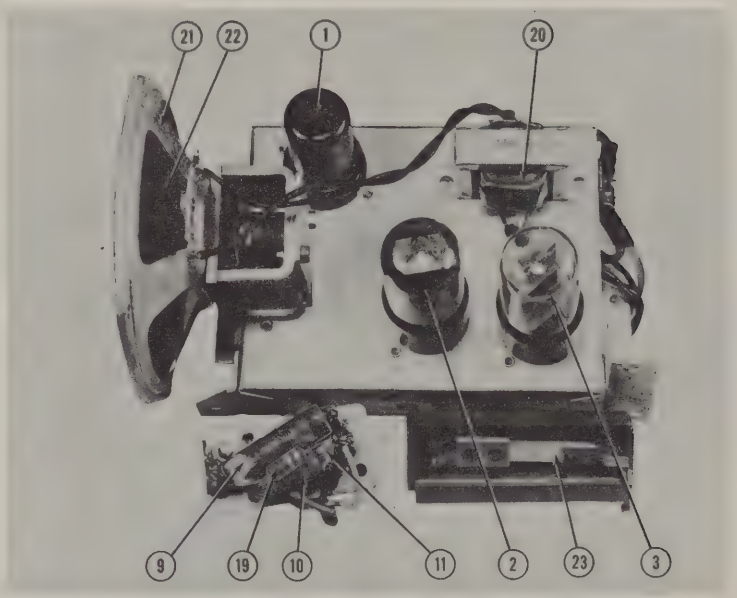
ITEM No.	PART NAME	RCA PART No.	NOTES
23	Switch		On-Off

DATE 11/47

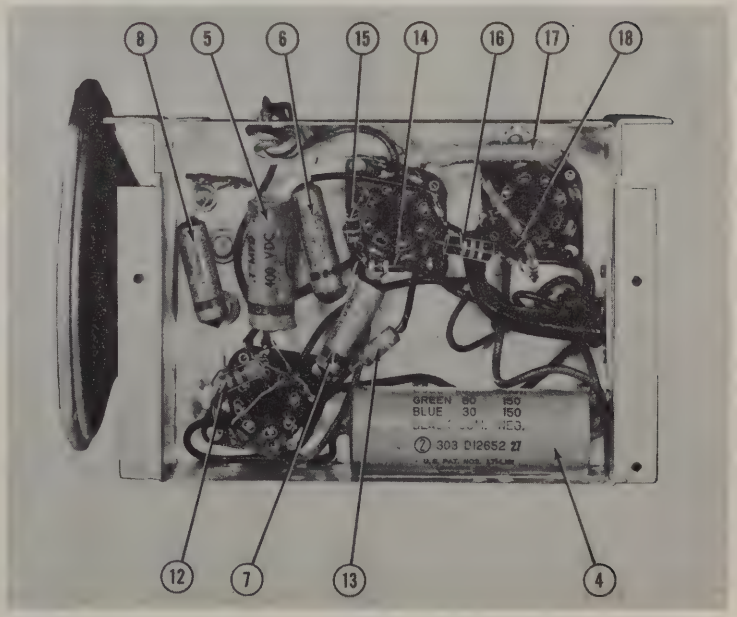
SET #28

FOLDER #4718-28

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



REGAL MODEL
1749

REGAL MODEL 1749

TRADE NAME	Regal, Model 1749
MANUFACTURER	Regal Electronics Corp., 605 W. 130th St., New York, N.Y.
TYPE SET	AC-DC Operated 3 Band Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types, 12SG7 RF Amp., 12SA7 Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC — RATING .270 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC — **SHORT WAVE** 2.25-7.5MC 7.25-22.3MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis. Volume control should be at maximum position output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to front stator of tuning cap. Low side to chassis.	455KC	BC (fully counter-clock-wise)	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce modulation.
2	.1 MFD.	"	"	"	Tuning cap. fully closed.	"	A5	Adjust for minimum output.
3	200MMFD.	High side to ext. ant. lead. Low side to chassis.	1650KC	"	Tuning cap. fully open.	"	A6	Adjust for maximum output.
4	200MMFD.	"	1500KC	"	Tune for maximum output.	"	A7	" " " "
5	200MMFD	"	600KC	"	"	"	A8	Rock tuning cap. and adjust for maximum output. Repeat Steps 3, 4 and 5 until no further increase in output can be obtained.
6	400Ω	"	7.5MC	SW 1 (center-position)	Tuning cap. fully open.	"	A9	Adjust for maximum output. Tune signal generator to 8.4MC. Signal should be heard. If it is not re-tune signal generator.to 7.5 and loosen trimmer until next peak is obtained. Adjust for maximum output and recheck for image.
7	400Ω	"	7.0MC	"	Tune for maximum output.	"	A10	Rock tuning cap. and adjust for maximum output.
8	400Ω	"	22.3MC	SW 2 (fully clock-wise)	Tune for maximum output. Tuning cap. fully open.	"	A11	Adjust for maximum output. Check for image as in Step 6 (tune sig..gen. to 23.2MC).
9	400Ω	"	20MC	"	Tune for maximum output.	"	A12	Rock tuning cap. and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

REGAL MODEL 1749

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: REGAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SG7	12SG7	8BK	
2	Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: REGAL PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	50	150	60-101	2N521	DSB-2x50-150	TA-505	PRSA150-50-50	EZ5515	Filter - Red
B	50	150							" - "
8	.02	600		TP412	MPH-6-02	TC-12	684-02	DT6S2	Line Filter
9	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Output Plate Bypass
10	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
11	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
12	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	RF Bypass Pwr. Supply
13	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	AVC Filter
14	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	Conv. Screen Bypass
15	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	Fixed Pad.
16	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
17	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
18	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	Ext. Ant. Coupling
19	200	500		MC237	MO.5-32	1FM-32	1468-0002	5W5T2	AF Plate Bypass
20	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Diode RF Filter
21	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	" " "
22	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	RF Coupling

CONTROLS

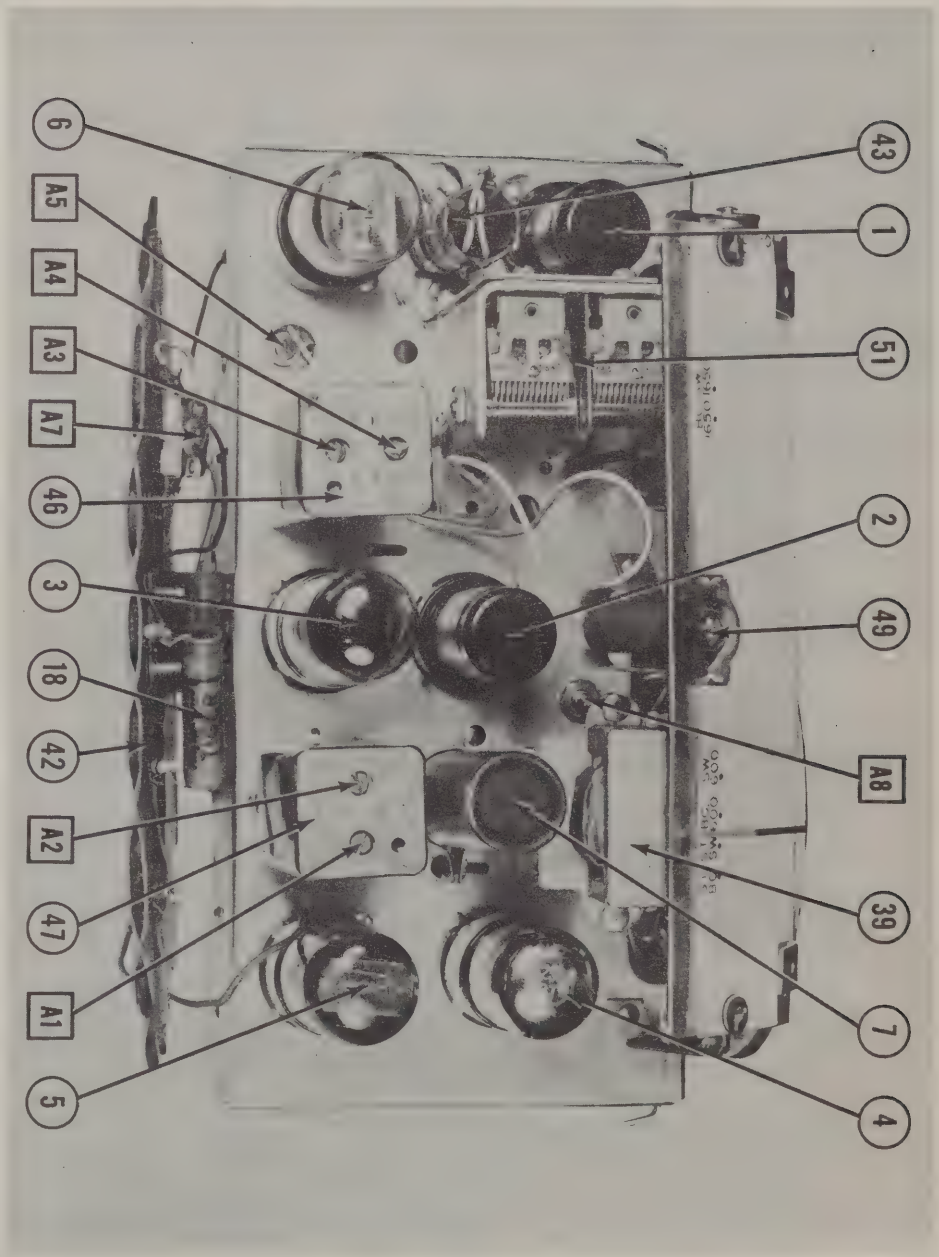
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REGAL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23A	500KΩ	½	20-101	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 23A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REGAL PART No.	IRC PART No.	IDENTIFICATION CODES
24	10KΩ	½		BTS-10K	Br.-Blk.-Or. RF Coil Shunt
25	4700Ω	½		BTS-4700	Yl.-Vi.-Red RF Plate Load
26	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AVC Network
27	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Converter Grid
28	20KΩ	½		BTS-22K	Red-Blk.-Or. Oscillator Grid
29	120Ω	½		BW-½-120	Br.-Red-Br. Parasitic Suppressor-See Note 1
30	2000Ω	½		BTS-2200	Red-Blk.-Red Converter Screen Dropping-See Note 2
31	65KΩ	½		BTS-68K	Blue-Grn.-Or. Diode RF Filter-See Note 3
32	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn. AVC Network
33	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue AF Grid
34	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. AF Plate Load-See Note 4
35	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Output Grid
36	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
37	1000Ω	2		BT-2-1000	Br.-Blk.-Red Filter
38	15Ω	½		BW-½-15	Br.-Grn.-Blk. Rectifier Ballast

Note 1 - Some models use 75Ω in this application.
Note 2 - Some models use 1000Ω in this application.
Note 3 - Some models use 47KΩ in this application.
Note 4 - Some models use 250KΩ in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA REGAL PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
39	3500Ω	3.8Ω	240Ω	.7Ω	Part of 60-101	A-3879	T22847	A-2928	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA REGAL PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-105		
40	PM	3.3Ω	60-101	Mod. P5-X		
	CONE DIA.	VC DIA.				
41	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

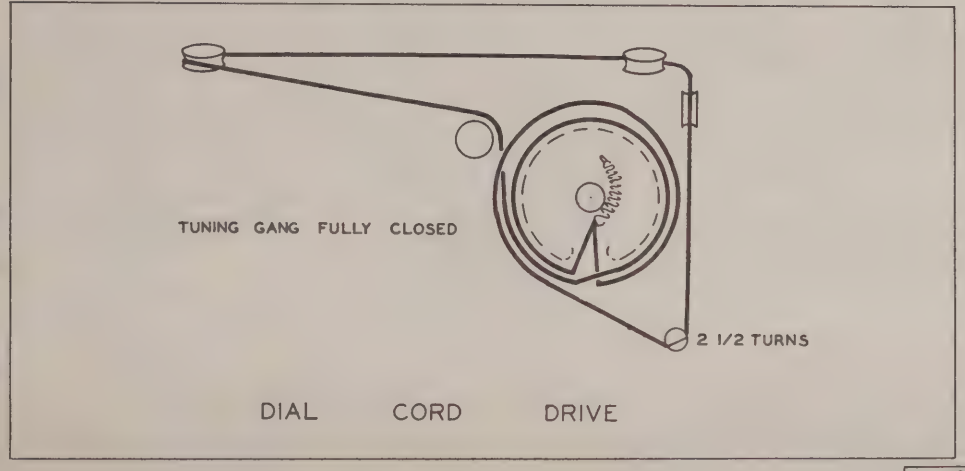
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA REGAL PART No.	MEISSNER PART No.	
42	Loop Ant.	.1Ω	1.2Ω	30-107		Items 43A & 43B wound on same form.
43A	SW Ant.Coil	.7*	.2Ω	30-124		*Common primary.
43B	" " "		0Ω			
44A	BC Osc.Coil		5Ω	30-123		Item 44A, 44B & 44C wound on same form.
44B	SW " "		.2Ω			
44C	" " "		0Ω			
45	Wave Trap		51Ω	30-106		
46	Input IF	15Ω	15Ω	30-104	16-6658	
47	Output IF	15Ω	15Ω	30-105	16-6660	
48	RF Choke		1Ω	30-125		

DIAL LIGHT

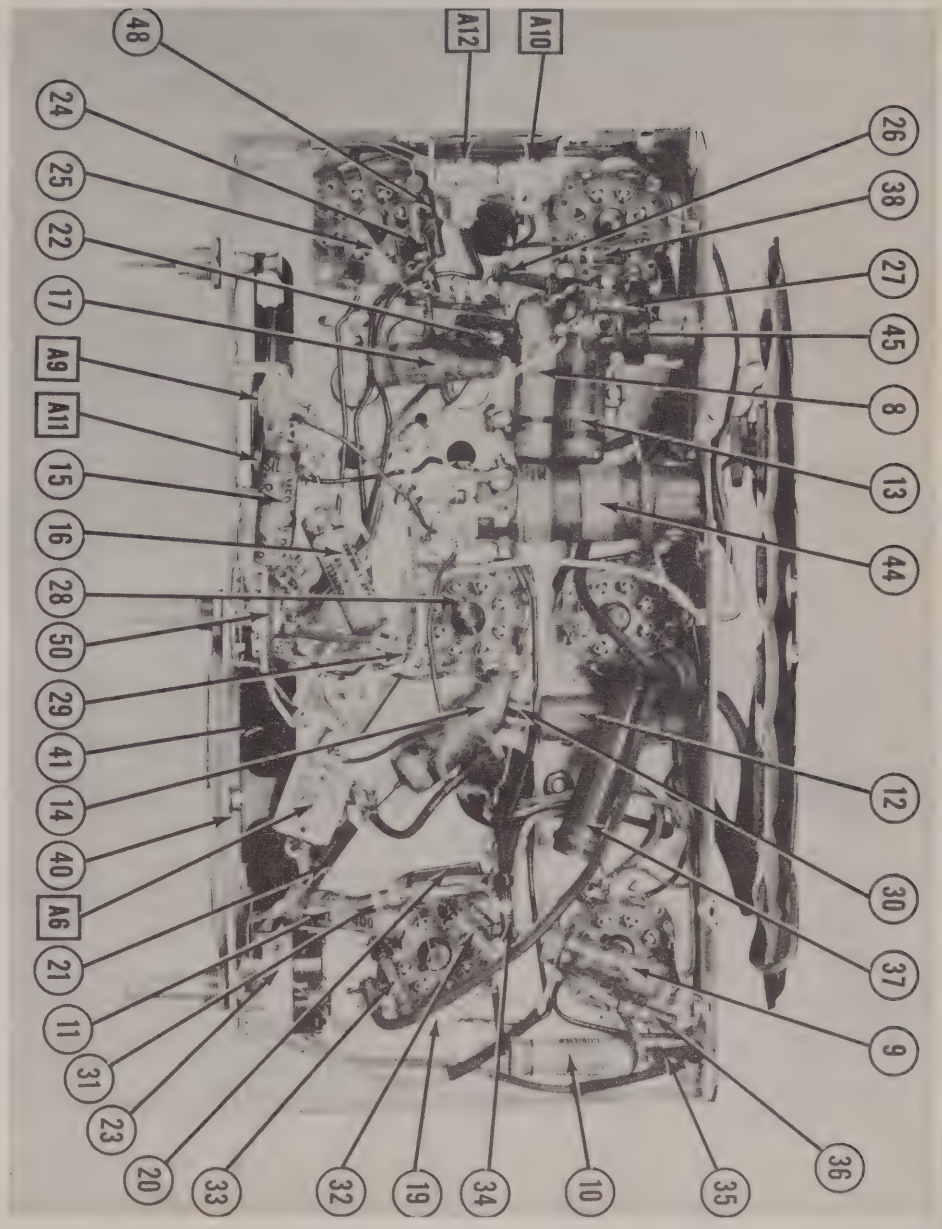
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA REGAL PART No.		INSTALLATION NOTES
49	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

ITEM No.	PART NAME	REGAL PART No.	NOTES
50	Bandswitch	95-108	
51	2 Gang Var. Cap.	40-104	20-472 MMF (each section)



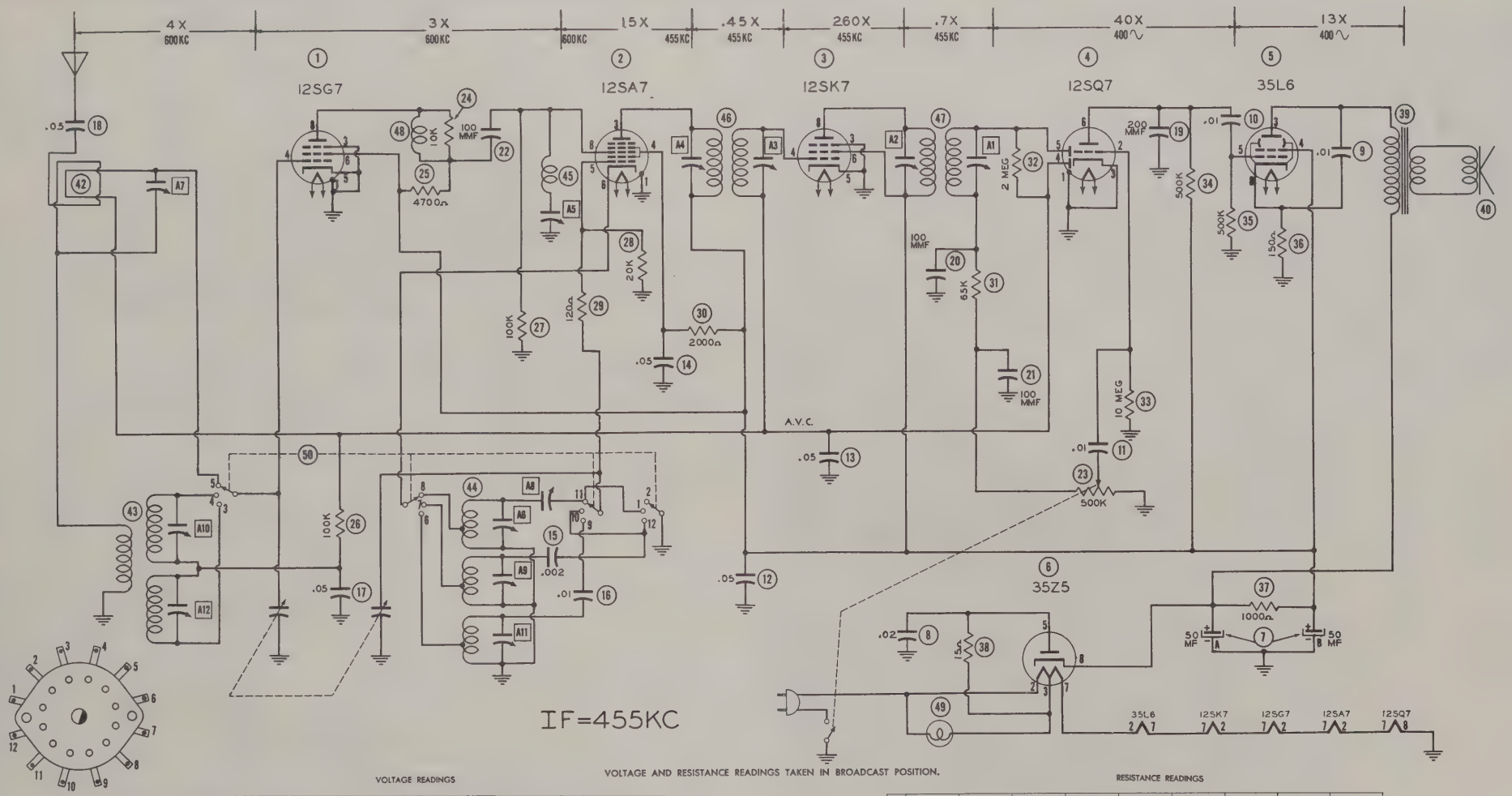
CHASSIS—BOTTOM VIEW



REGAL MODEL 1749

DATE 11/47 SET #28 FOLDER #4716-29

REGAL MODEL 1749



VOLTAGE READINGS

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SG7	0V.	25VAC	0V.	-.7VDC	0V.	85VDC	38VAC	65VDC
2	12SA7	0V.	12VAC	85VDC	70VDC	-14VDC§	0V.	25VAC	0V.
3	12SK7GT	0V.	38VAC	0V.	-.7VDC	0V.	85VDC	50VAC	85VDC
4	12SQ7GT	0V.	-.6VDC	0V.	-.7VDC	-.7VDC	55VDC	12VAC	0V.
5	35L6GT	115VDC	85VAC	105VDC	83VDC	0V.	0V.	50VAC	5.1VDC
6	35Z5GT	0V.	117VAC	112VAC	-.7VDC	110VAC	0V.	85VAC	115VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SG7	0Ω	25Ω	0Ω	2.5 Meg.	0Ω	50KΩ	38Ω	55KΩ
2	12SA7	0Ω	12Ω	50KΩ	52KΩ	20KΩ	1Ω	25Ω	100KΩ
3	12SK7GT	0Ω	38Ω	0Ω	2.5 Meg.	0Ω	50KΩ	50Ω	50KΩ
4	12SQ7GT	0Ω	10 Meg.	0Ω	2.5 Meg.	550KΩ	550KΩ	12Ω	0Ω
5	35L6GT	50KΩ	85Ω	50KΩ	50KΩ	500KΩ	INF.	50Ω	150Ω
6	35Z5GT	0Ω	110Ω	108Ω	2.5 Meg.	112Ω	INF.	85Ω	50KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

4718-29

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SENTINEL MODELS
309-I, 309-N, 309-R, 309-W

SENTINEL MODELS
309-I, 309-N, 309-R, 309-W

SENTINEL MODEL 309-W

TRADE NAME	Sentinel Models 309-I, 309-N, 309-R, 309-W
MANUFACTURER	Sentinel Radio Corp., 2020 Ridge Ave., Evanston, Ill.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	540-1650KC RATING .230 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with base of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.02 MFD.	High side to rear stator of tuning cap. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation.
2		Loop	1650KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		"	1400KC	Tune for maximum output.	"	A6	Adjust for maximum output.

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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DATE 11/47 SET #28 FOLDER #4718-30

PARTS LIST AND DESCRIPTIONS

SENTINEL MODELS 309-I, 309-N, 309-R, 309-W

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SENTINEL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7BK	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SENTINEL PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	50	150	25E24	2N521	DSB-2x50-150	TA-505		EZ5515	Filter - Yellow
B	50	150							" - Red
7	.05	400	23E416	TP426	MPH-4-05	TC-15	484-05	DT4S5	Line Filter
8	.01	400	23E411	TP421	S-4-01	TC-11	484-01	DT4S1	Output Plate Bypass
9	.01	400	23E411	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.01	400	23E411	TP421	S-4-01	TC-11	484-01	DT4S1	" "
11	.05	400	23E416	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	250	500	23E42	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Output Grid Bypass
13	250	500	23E42	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Diode RF Filter
14	100	500	23E11	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SENTINEL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
15A	500KΩ	½	28E27	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 15A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

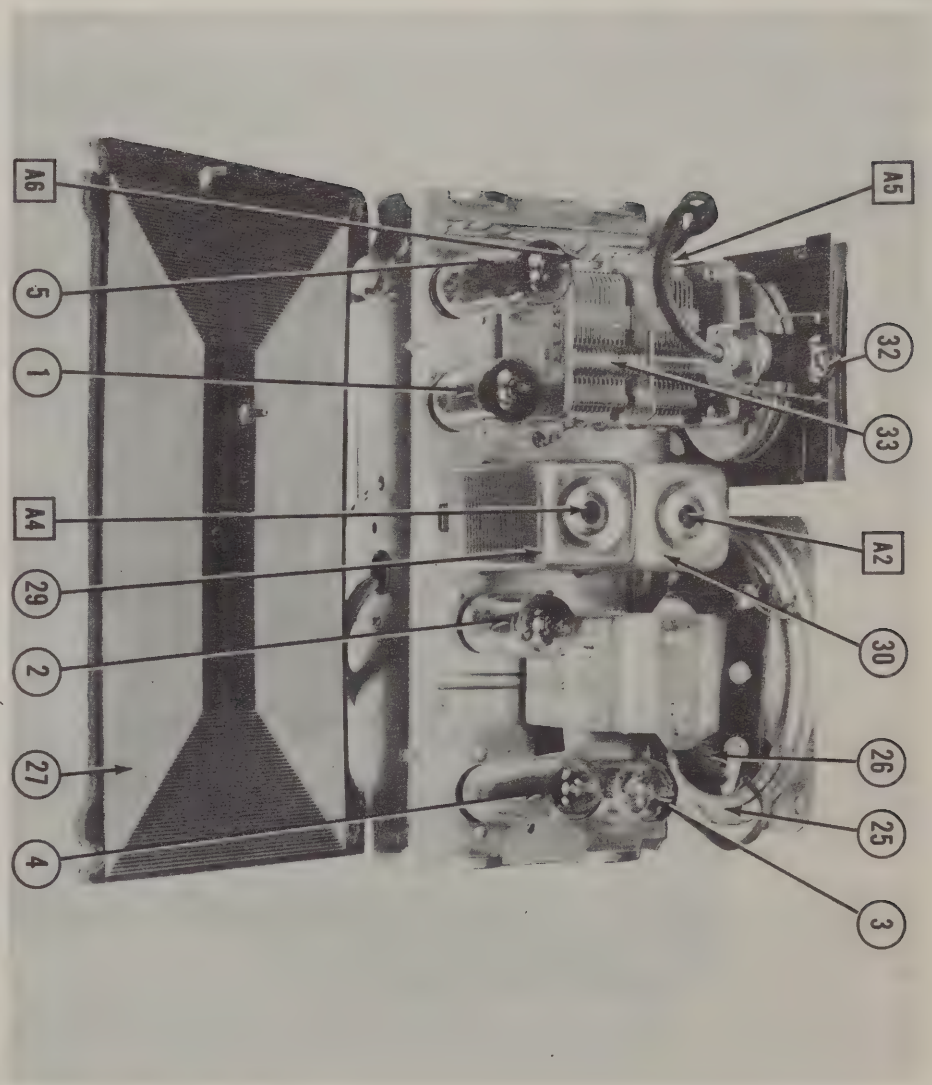
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SENTINEL PART No.	IRC PART No.	IDENTIFICATION CODES
16	22KΩ	1/3	27E223	BTS-22K	Red-Red-Or. Oscillator Grid
17	20 Meg.	1/3	27E206	BTS-22 Meg.	Red-Blk.-Blue AVC Network
18	3.3 Meg.	1/3	27E335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
19	3.3 Meg.	1/3	27E335	BTS-3.3 Meg.	Or.-Or.-Grn. AF Grid
20	220KΩ	1/3	27E224	BTS-220K	Red-Red-Yl. AF Plate Load
21	470KΩ	1/3	27E474	BTS-470K	Yl.-Vi.-Yl. Output Grid
22	150Ω	1/3	27E151	BW-½-150	Br.-Grn.-Br. Output Cathode
23	2200Ω	1	27E222-3	BTA-2200	Red-Red-Red Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SENTINEL PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
24	3400Ω	3.4Ω	285Ω	.7Ω	22E23	A-3876	T22S45	A-2928	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: SENTINEL PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.				
25	PM	3.4Ω	1E27			
	CONE DIA.	VC DIA.				
26	3-3/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SENTINEL PART No.	MEISSNER PART No.
27	Loop Ant.		2.5Ω	64E12	
28	Osc. Coil	1Ω	8Ω	20E306	14-1040
29	Input IF	27Ω	26Ω	20E301	16-6666
30	Output IF	26Ω	27Ω	20E271 or 20E301	16-6667
31	RF Choke		0Ω		

DIAL LIGHT

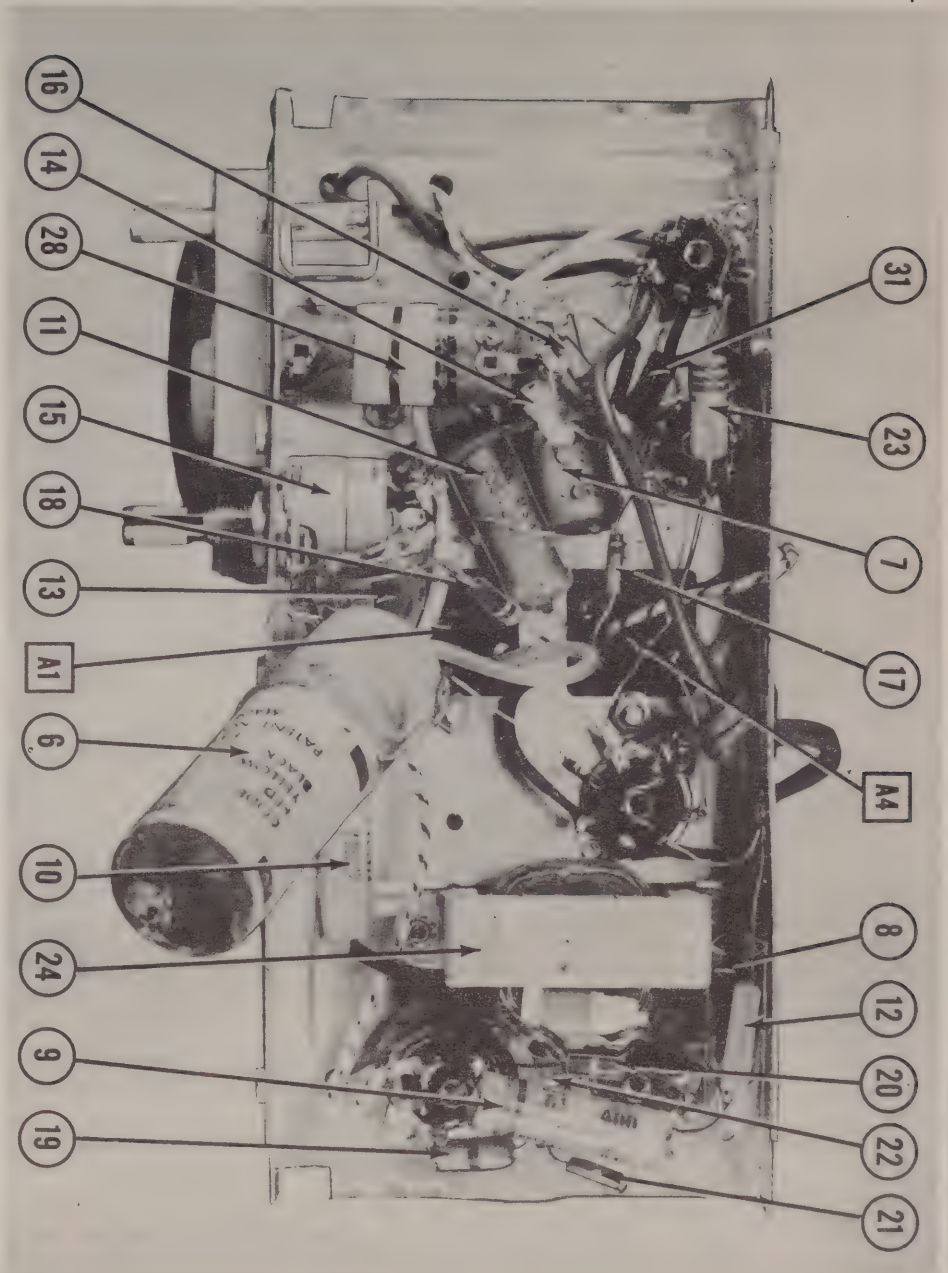
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: SENTINEL PART No.		INSTALLATION NOTES
32	Bayonet	6-8	0.25	Blue	40E2		Type 44

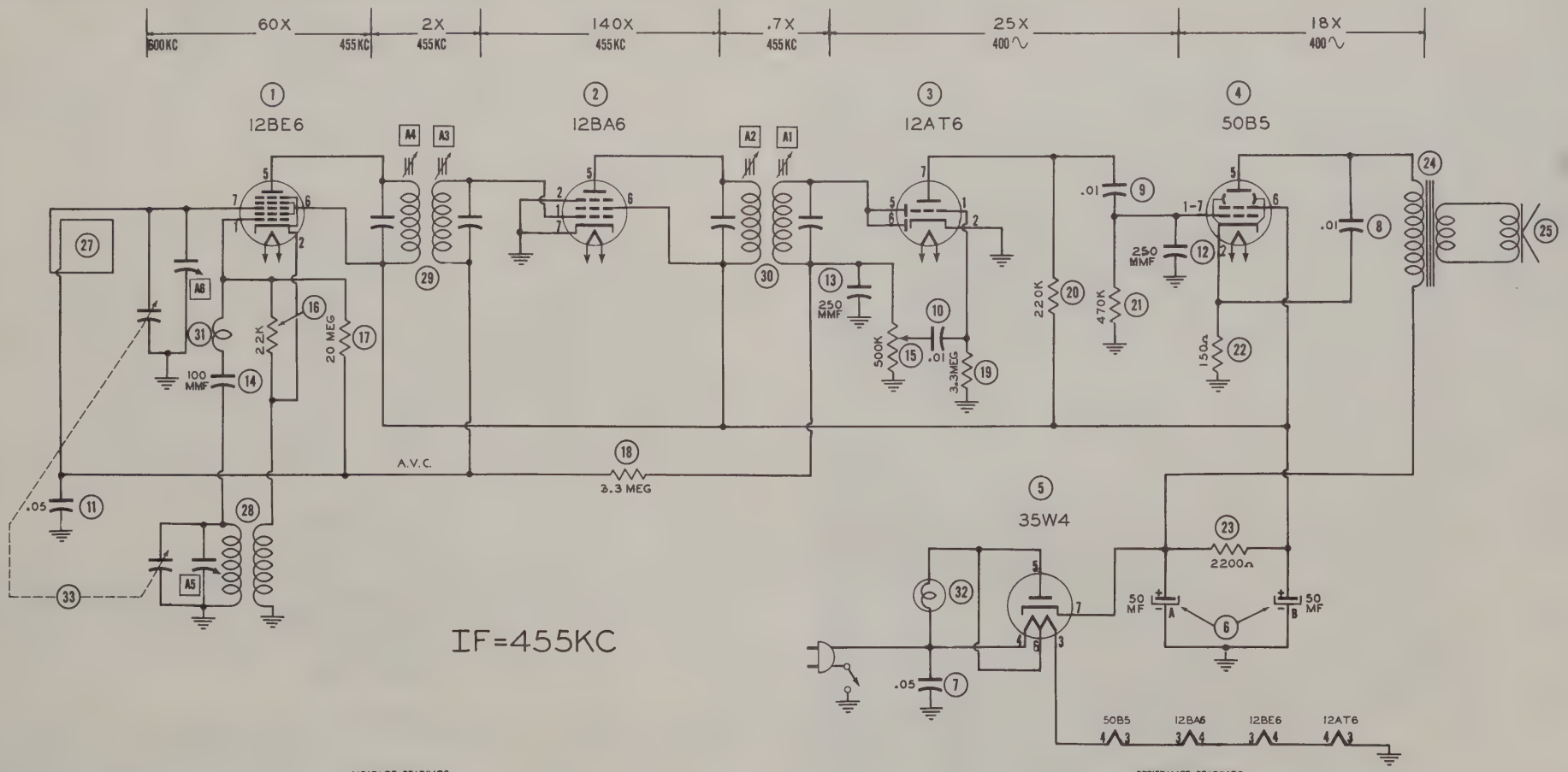
MISCELLANEOUS

ITEM No.	PART NAME	SENTINEL PART No.	NOTES
33	2 Gang Var. Cap.	20E273	(36-484 MMF, 30-198 MMF)
	Cabinet	7E129-2	Walnut Plastic
	"	7E129-3	Ivory "
	"	7E129-4	Red "
	Dial Scale	36E32	
	Dial Pointer	35E21	
	Knob	37E47	For Walnut Cabinet
	"	37E47-2	For Ivory & Red Cabinet

DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	-7.8VDC§	0V.	25VAC	12VAC	75VDC	75VDC	-.6VDC
2	12BA6	-.6VDC	0V.	38VAC	25VAC	75VDC	75VDC	0V.
3	12AT6	-.4VDC	0V.	0V.	12VAC	-.4VDC	-.4VDC	45VDC
4	50B5	0V.	5.8VDC	38VAC	87VAC	115VDC	75VDC	0V.
5	35W4	0V.	125VDC	87VAC	117VAC	113VAC	113VAC	125VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	22KΩ	1Ω	25Ω	12Ω	50KΩ	50KΩ	3.5 Meg.
2	12BA6	3.5 Meg.	0Ω	38Ω	25Ω	50KΩ	50KΩ	0Ω
3	12AT6	3.5 Meg.	0Ω	0Ω	12Ω	500KΩ	500KΩ	270KΩ
4	50B5	500KΩ	150Ω	38Ω	90Ω	50KΩ	50KΩ	500KΩ
5	35W4	INF.	50KΩ	90Ω	115Ω	110Ω	110Ω	50KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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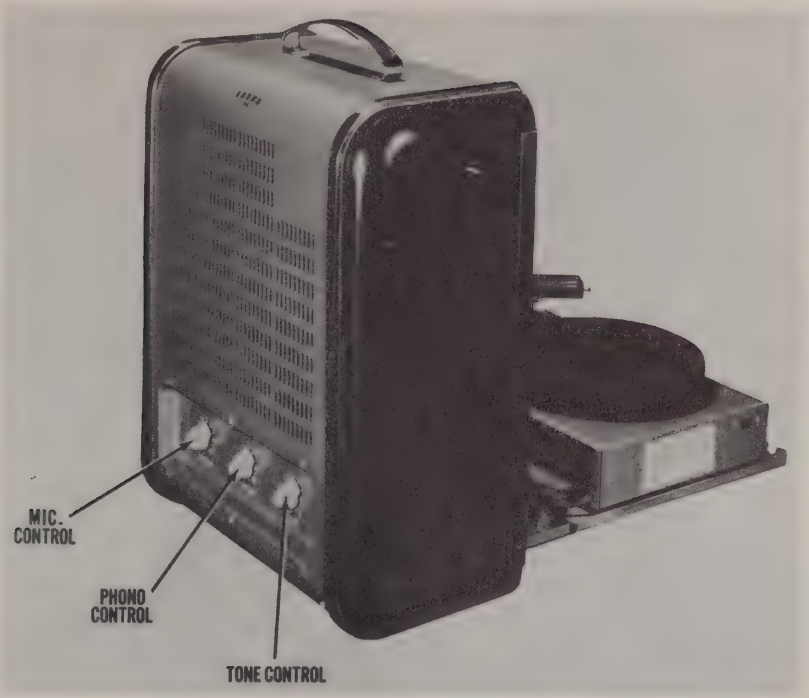
4718-30

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



SOUND INC.
MODEL MB7E3

SOUND INC.
MODEL MB7E3

SOUND INC., MODEL MB7E3

TRADE NAME	Sound, Inc., Model MB7E3
MANUFACTURER	Sound, Inc., 221 E. Cullerton St., Chicago 16, Ill.
TYPE SET	AC Operated 2 Channel Public Address System
TUBES (FIVE)	Types, 6SQ7 Mic. Amp., 6SL7GT Phono Amp. & AF Amp., (2) 6V6GT Power Output, 6X5GT Rectifier.
POWER SUPPLY	105-125 Volts AC RATING .550 Amp. @ 117 Volts AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SQ7	0V.	0V.	1VDC	1VDC	1VDC	132VDC	3.1VAC	3.1VAC
2	6SL7GT	0V.	240VDC	3VDC	0V.	93VDC	1.2VDC	3.1VAC	3.1VAC
3	6V6GT	0V.	3.1VAC	400VDC	290VDC	0V.	0V.	3.1VAC	21VDC
4	6V6GT	0V.	3.1VAC	400VDC	290VDC	0V.	240VDC	3.1VAC	21VDC
5	6X5GT	0V.	405VDC	360VAC	0V.	360VAC	0V.	405VDC	405VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SQ7	0Ω	1 Meg.	1.5KΩ	1.5KΩ	1.5KΩ	320KΩ	.1Ω	.1Ω
2	6SL7GT	660KΩ	115KΩ	2.7KΩ	660KΩ	320KΩ	1.5KΩ	.1Ω	.1Ω
3	6V6GT	INF.	.1Ω	50KΩ	65KΩ	1.5KΩ	INF.	.1Ω	340Ω
4	6V6GT	INF.	.1Ω	50KΩ	65KΩ	1.7KΩ	115KΩ	.1Ω	340Ω
5	6X5GT	0Ω	50KΩ	163Ω	INF.	175Ω	INF.	50KΩ	50KΩ

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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DATE 11/47 SET #28 FOLDER #4718-31

PARTS LIST AND DESCRIPTIONS

SOUND, INC.
MODEL MM7L-S

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SOUND INC. PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Mic. Input	6SQ7	6SQ7	8Q	
2	Phono Input & Audio	6SL7GT	6SL7GT	8BD	
3	Power Output	6V6GT	6V6GT	7AC	
4	Power Output	6V6GT	6V6GT	7AC	
5	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SOUND INC. PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6	40	450		FP140	DY-40-450	EL-4	AF8J	UP4045	Filter
7	140	350			DY-125-350			UP12535	"
8	25	25		TC26	M-25-25	TA-25	PRS25-25	BR252A	Cathode Bypass
9	25	25		TC26	M-25-25	TA-25	PRS25-25	BR252A	" "
10	.002	1600		OW331	TM-16-002	TR-22	1684-002	MD16D2	Output Plate Bypass
11	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Audio Coupling
12	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
13	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
14	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Phono Motor Sw. Bypass
15	750	500		MC255	MO.5-38	1FM-28	1467-008	1W3D8	Tone Comp.
16	250	500		MC240	MO.5-325	1FM-325	1468-00025	5W5T25	" "
17	50	500		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	" "

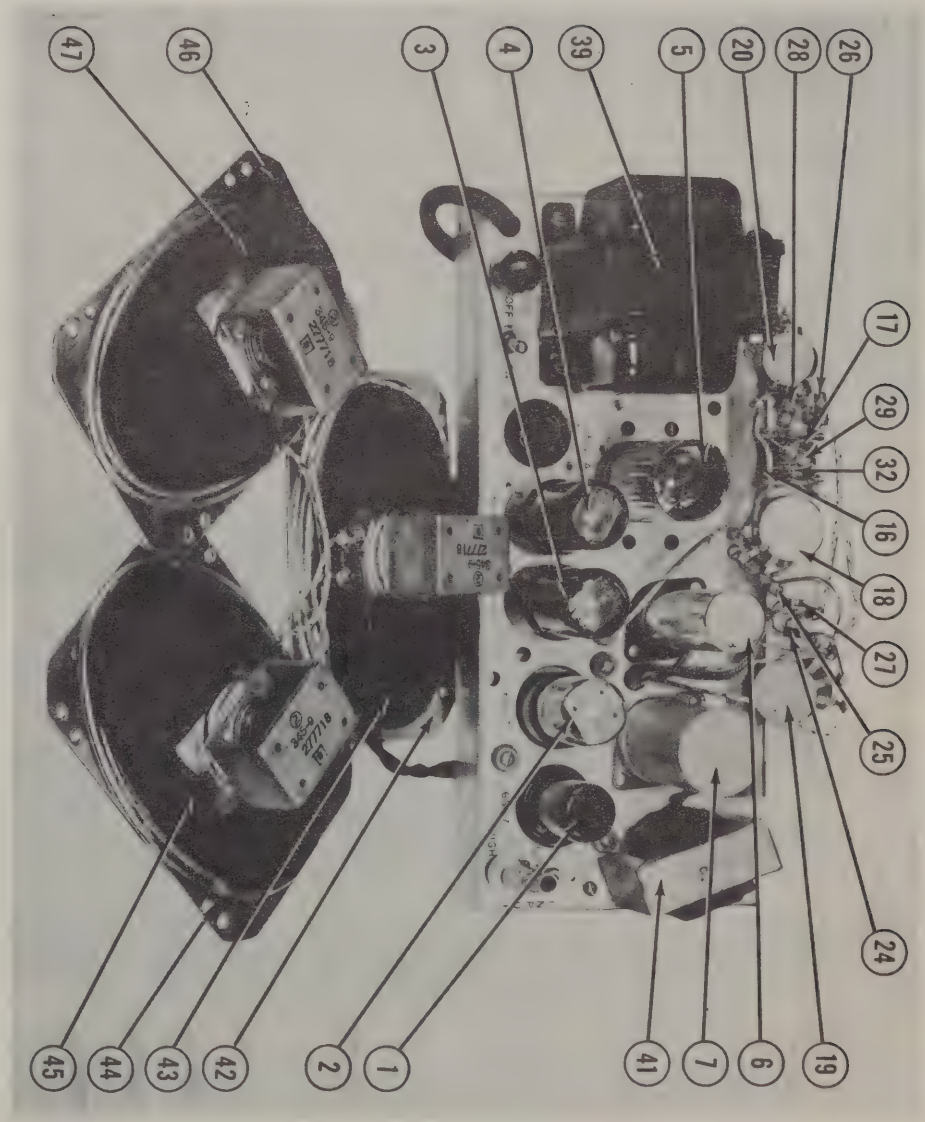
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SOUND INC. PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	500KΩ	½		MR48	D13-133	M-60-Z	Mike Control
B	Shaft			Not Req.	A	Not Req.	Attach to 18A per instructions
19A	500KΩ	½		MR48	D13-133	M-60-Z	Phono Control
B	Shaft			Not Req.	A	Not Req.	Attach to 19A per instructions
20A	4 Meg.	½					Tone Control
B	Shaft						Attach to 20A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SOUND INC. PART No.	IRC PART No.	IDENTIFICATION CODES
21	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Mic. Amp. Grid
22	1500Ω	½		BTS-1500	Br.-Grn.-Red Mic. Amp. Cathode
23	270KΩ	½		BTS-270K	Red-Vi.-Yl. Mic. Amp. Plate Load
24	1.8 Meg.	½		BTS-1.8 Meg.	Br.-Gray-Grn. Isolation
25	1.8 Meg.	½		BTS-1.8 Meg.	Br.-Gray-Grn. "
26	1.8 Meg.	½		BTS-1.8 Meg.	Br.-Gray-Grn. Tone Compensation
27	220KΩ	½		BTS-220K	Red-Red-Yl. " "
28	1.8 Meg.	½		BTS-1.8 Meg.	Br.-Gray-Grn. " "
29	1.8 Meg.	½		BTS-1.8 Meg.	Br.-Gray-Grn. " "
30	1500Ω	½		BTS-1500	Br.-Grn.-Red 1st AF Cathode
31	270KΩ	½		BTS-270K	Red-Vi.-Yl. 1st AF Plate Load
32	820KΩ	½		BTS-820K	Gray-Red-Yl. 2nd AF Grid
33	2700Ω	½		BTS-2700	Red-Vi.-Red 2nd AF Cathode
34	50KΩ	½		BTS-47K	Grn.-Blk.-Or. 2nd AF Plate Load
35	342Ω	5		AB-350	Output Cathode
36	220KΩ	½		BTS-220K	Red-Red-Yl. Phono Shunt
37	820KΩ	½		BTS-820K	Gray-Red-Yl. Series Phono
38	15KΩ	10		AB-15K	Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	SOUND INC. PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
39	117V AC @ .55A	730V CT @ .045A	6.5V AC @ .3A	6.4V CT @ 1.6A			T22R32*	

*Drill new mounting holes.

CHOKE (DRIVER)

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE	DC RES.	SOUND INC. PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
40	Matched to P-P Grids	325Ω CT			T20A19†		†Connect secondary only.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SOUND INC. PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
41	14000 Ω CT	1.2Ω	550Ω CT	.2Ω		A-3870	T22S88		

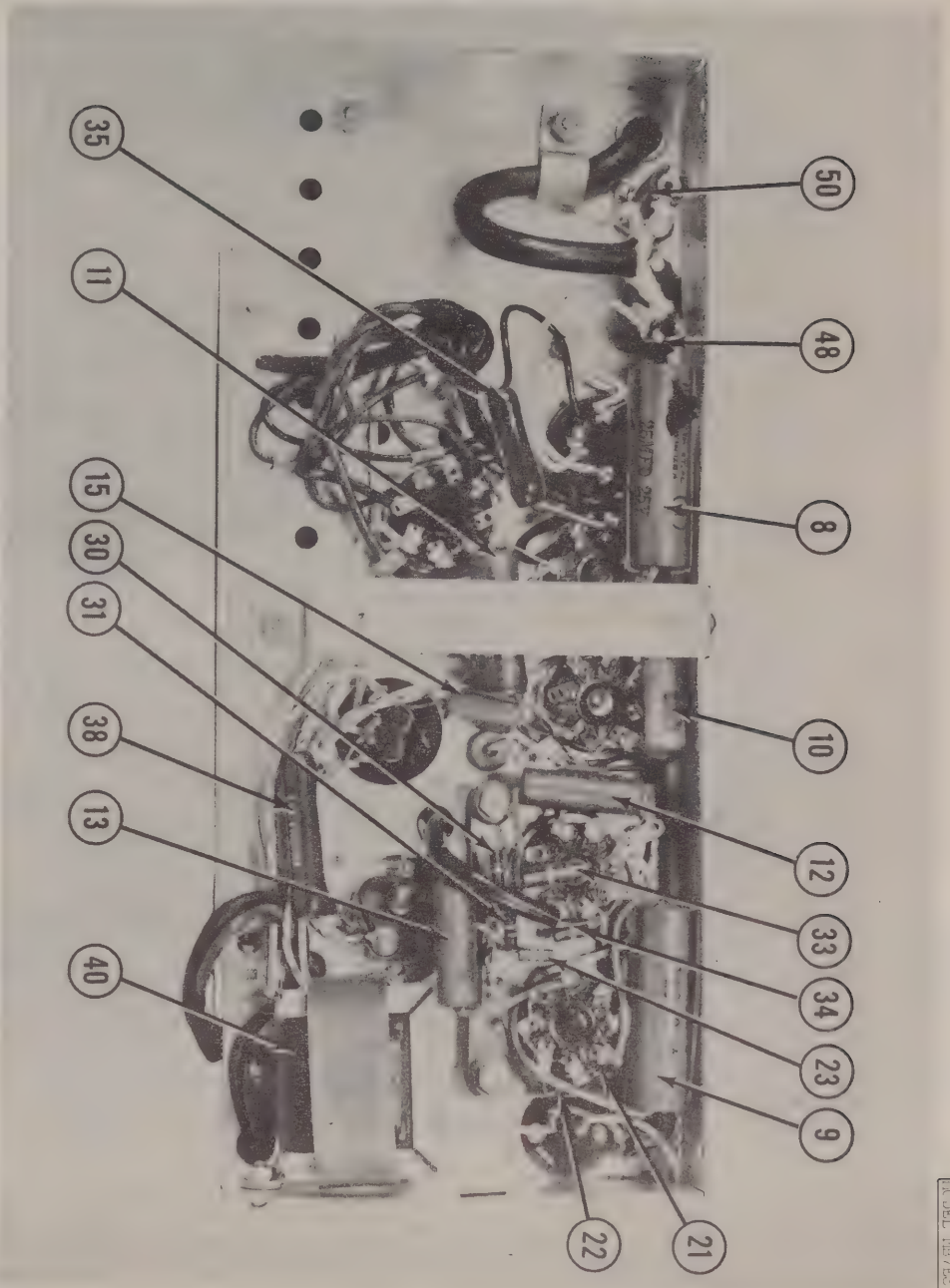
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SOUND INC. PART No.	JENSEN PART No.		
42	FIELD	VC IMP.				
	PM	3.8Ω				
43	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			
	4"x6"	1/2"				
44	FIELD	VC IMP.				
	PM	3.8Ω				
45	CONE DIA.	VC DIA.				
	4"x6"	1/2"				
46	FIELD	VC IMP.				
	PM	3.8Ω				
47	CONE DIA.	VC DIA.				
	4"x6"	1/2"				

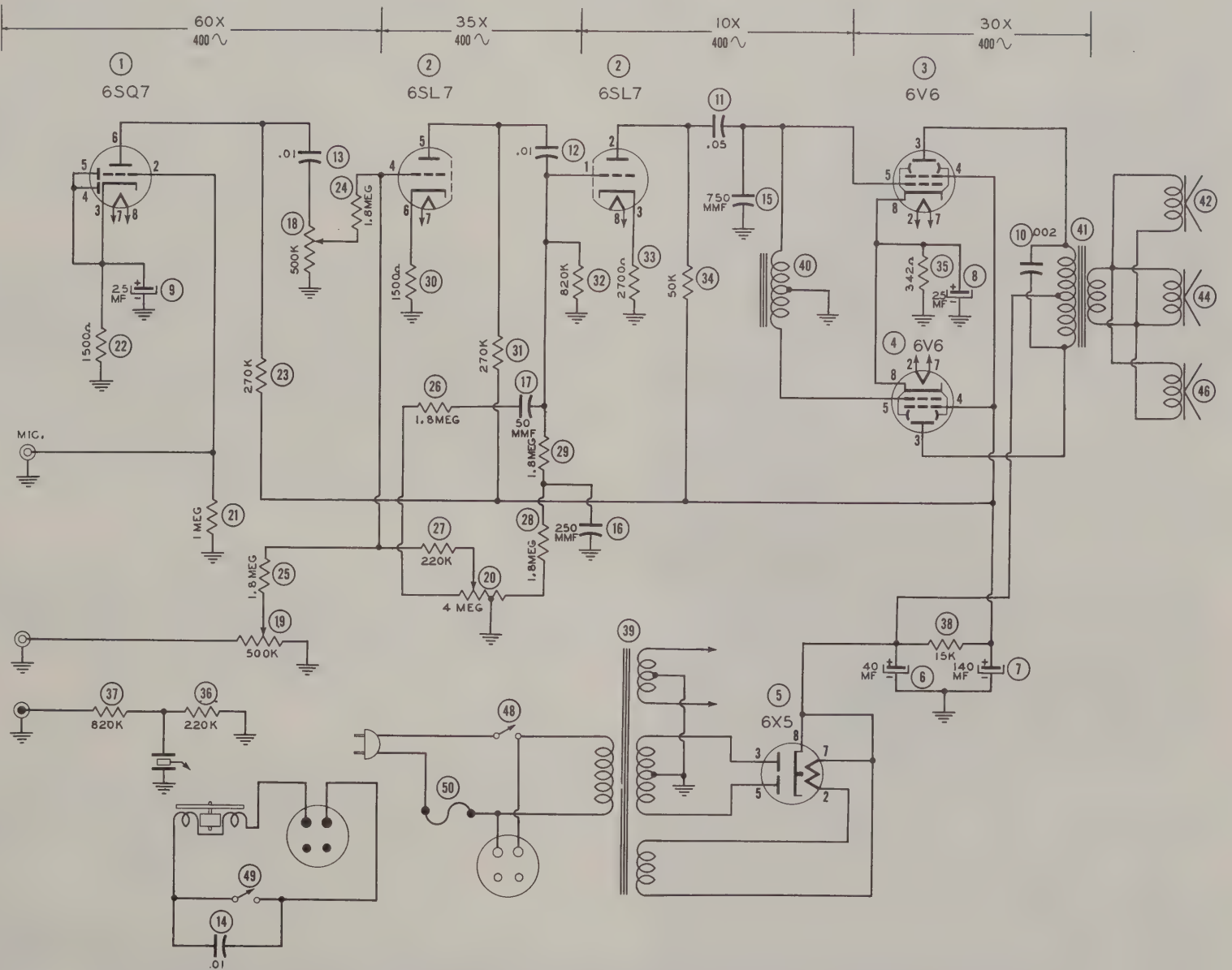
MISCELLANEOUS

ITEM No.	PART NAME	SOUND INC. PART No.	NOTES
48	Switch		On-Off
49	"		Phono Motor
50	Fuse		2 Amp.

CHASSIS—BOTTOM VIEW



SOUND, INC., MODEL M8763



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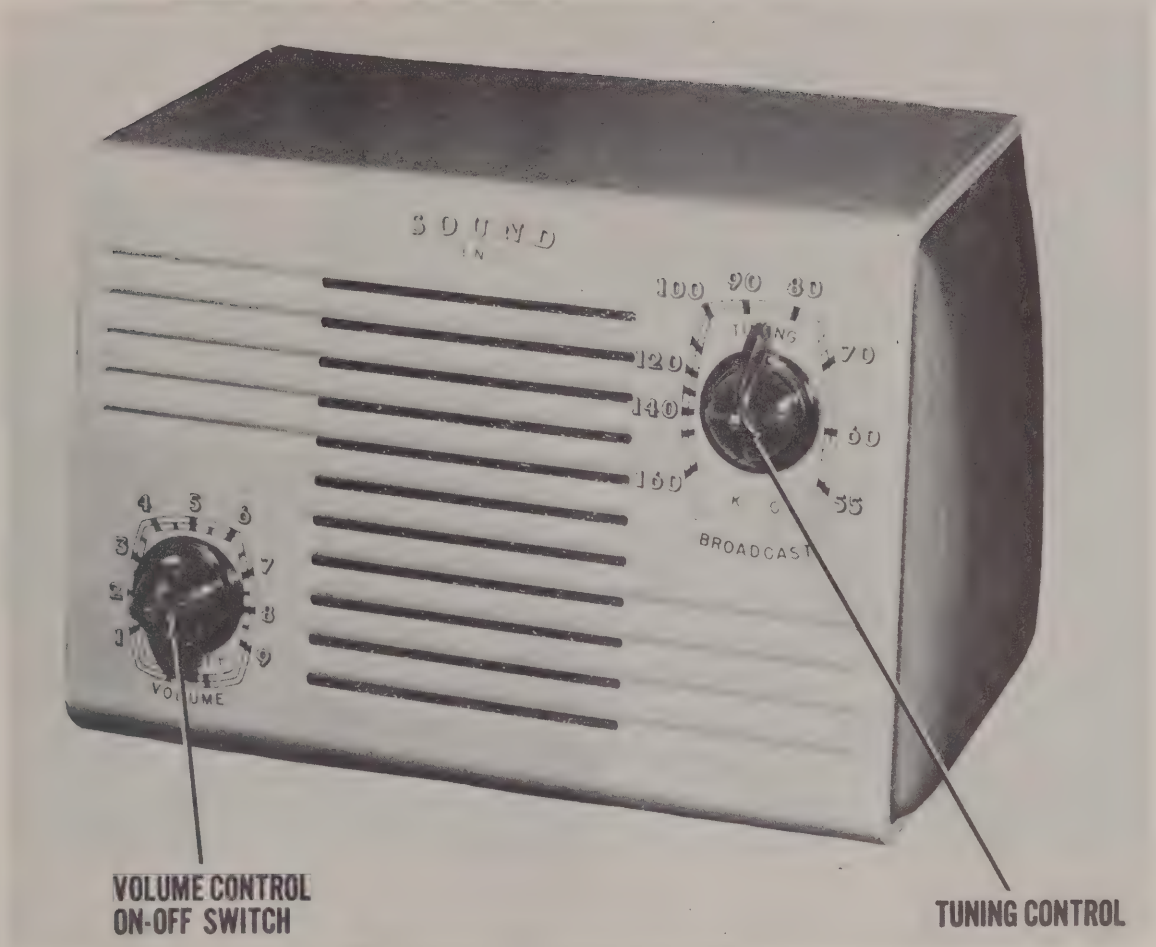
4718-31

SOUND INC.
MODEL 5R2



SOUND INC.
MODEL 5R2

SOUND INC. MODEL 5R2

TRADE NAME	Sound, Inc., Model 5R2
MANUFACTURER	Sound, Inc., 221 E. Cullerton St., Chicago 16, Ill.
TYPE SET	AC-DC Operated Superheterodyne Receiver
TUBES (FOUR)	Types, 12SA7GT Converter, 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	550-1600KC RATING .215 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 8 of 12SA7. Low side to chassis.	375KC	Slugs completely out of coils.	Across voice coil	A1,A2	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	200MMF.	High side to ext. ant. Low side to chassis.	1600KC	"	"	A3,A4	Adjust for maximum output.
3	200MMF.	"	1400KC	Tune for maximum output.	"	A5	" " " "

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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DATE 11/47 SET #28 FOLDER #4718-32

PARTS LIST AND DESCRIPTIONS

SOUND INC. MODEL 5R2

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SOUNC INC. PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7GT	12SA7GT	8AD	
2	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
3	Power Output	50L6GT	50L6GT	7AC	
4	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	SOUND INC. PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
5A	20	150		2N509	DSB-2x20-150	TA-220	PRSA150-20-20	EZ2215	Filter
B	20	150							"
6A	20	150		2N509	DSB-2x20-150	TA-220	PRSA150-20-20	EZ2215	"
B	20	150							50L6 Cath. Bypass
7	.05	400		TP426	MPH-6-05	TC-15	484-05	DT4S5	Line Filter
8	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	50L6 Plate Bypass
9	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
11	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	250	500		MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Diode RF Filter
13	500	500		MC245	MO.5-35	1FM-35	1468-0005	5W5T5	Fixed Trimmer
14	250	500		MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Ant. Coupling

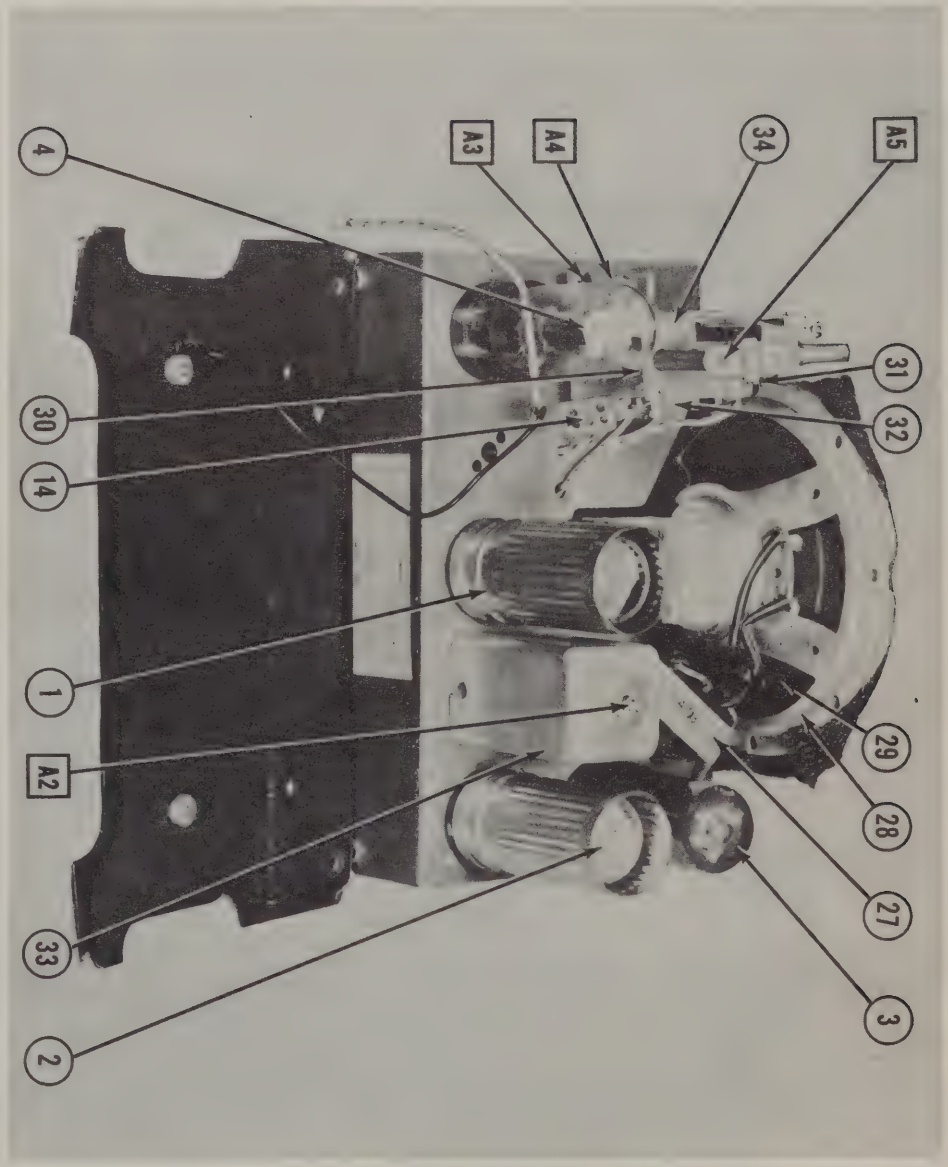
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	SOUND INC. PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
15	1 Meg.	1					Volume Control & Switch

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SOUND INC. PART No.	IRC PART No.	
16	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
17	22KΩ	½		BTS-22K	Red-Red-Or. Osc. Grid
18	1500Ω	1		BTA-1500	Br.-Grn.-Red Converter Screen Dropping
19	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
20	270KΩ	½		BTS-270K	Red-Vi.-Yl. 1st AF Plate Load
21	560KΩ	½		BTS-560K	Grn.-Blue-Yl. Output Grid
22	120Ω	½		BW-½-120	Br.-Red-Br. Output Cathode
23	2200Ω	1		BTA-2200	Red-Red-Red Filter
24	470Ω	1		BTA-470	Yl.-Vi.-Br. "
25	56Ω	1		BW-1-56	Grn.-Blue-Blk. Line Dropping
26	56Ω	1		BW-1-56	Grn.-Blue-Blk. Line Dropping

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SOUND INC. PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
27	2200Ω	3.75Ω	200Ω	.8Ω		A-3876	T22845	A-2928	

SPEAKER

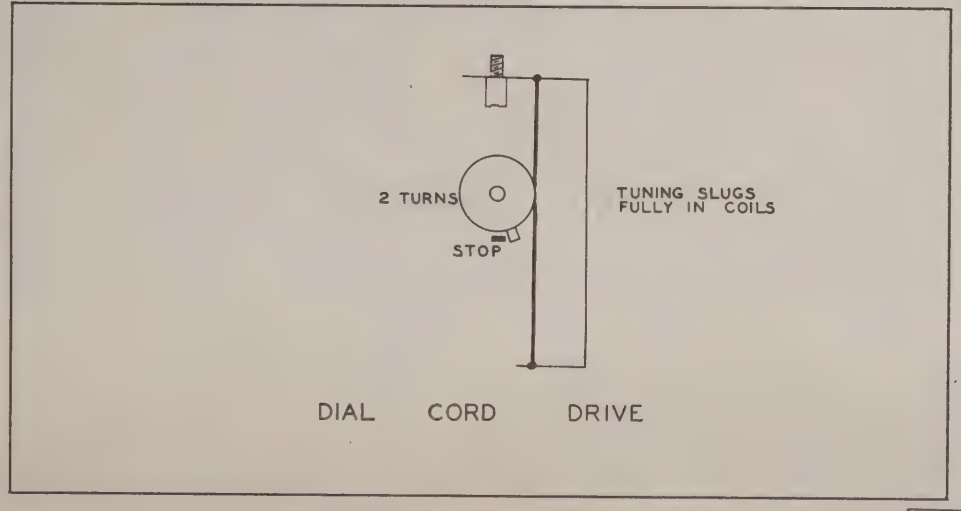
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SOUND INC. PART No.	JENSEN PART No.		
28	FIELD PM	VC IMP. 3.75Ω		ST-107 Mod. P5-V		
29	CONE DIA. 4-3/4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

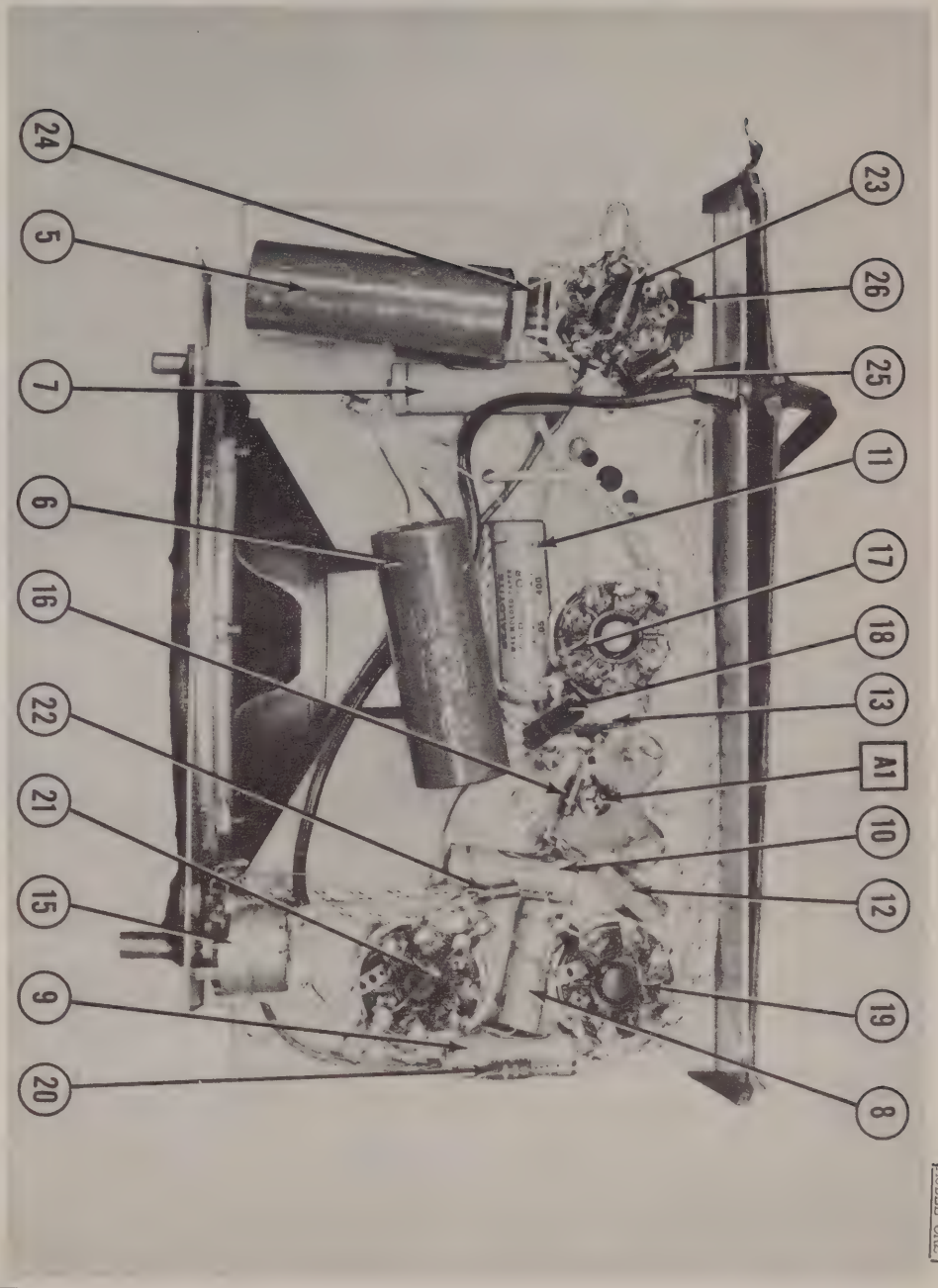
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SOUND INC. PART No.	MEISSNER PART No.	
30	Ant. Coil		5Ω			
31	Osc. Coil		7Ω			
32	Osc. Series Coil		8Ω			
33	IF Trans.	20Ω	19Ω			

MISCELLANEOUS

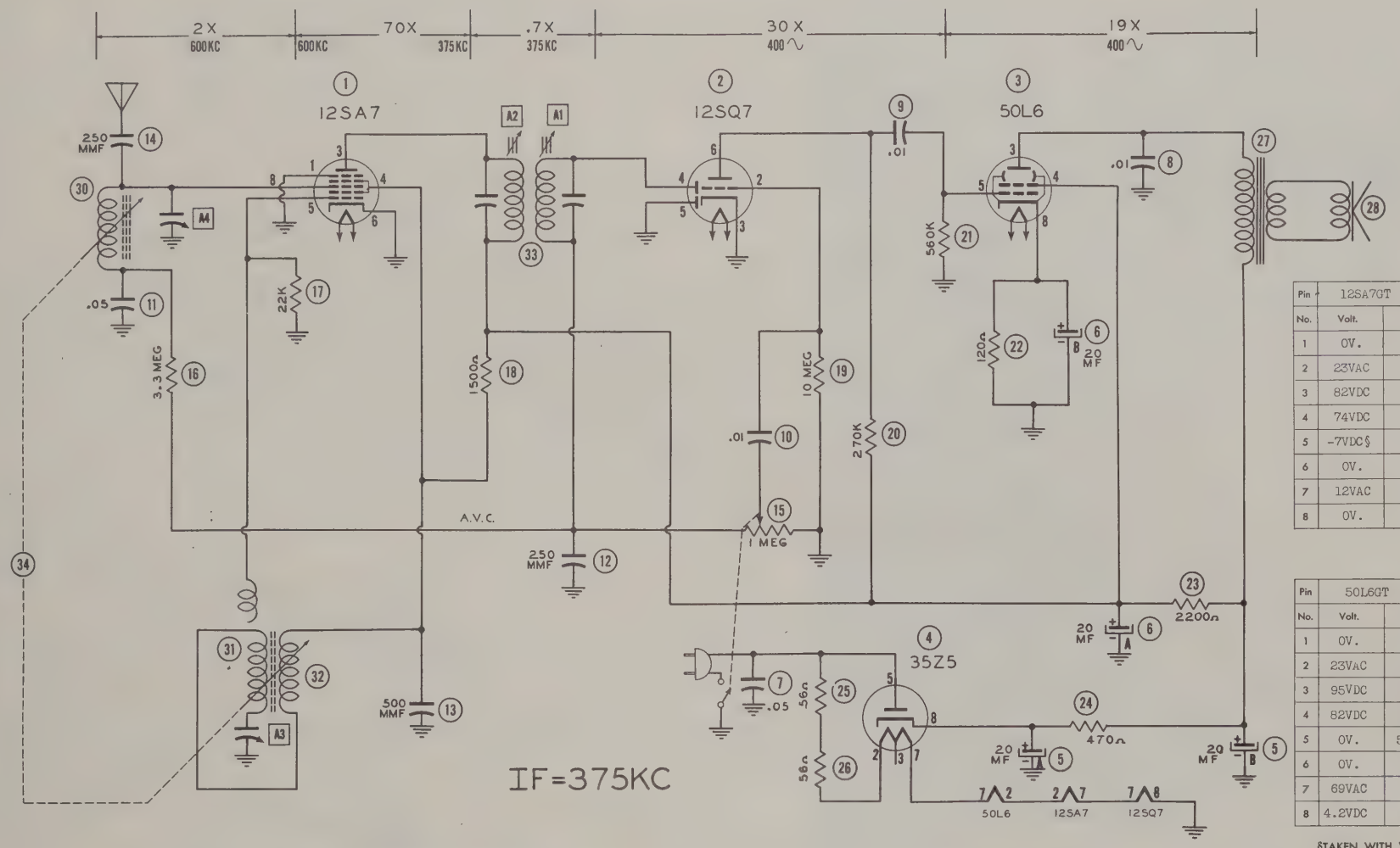
ITEM No.	PART NAME	SOUND INC. PART No.	NOTES
34	Tuner Assembly		



CHASSIS—BOTTOM VIEW



SOUND INC MODEL SR2



Pin No.	12SA7GT Volt.	12SA7GT Res.	12SQ7GT Volt.	12SQ7GT Res.
1	0V.	0Ω	0V.	0Ω
2	23VAC	24Ω	-.6VDC	10 Meg.
3	82VDC	70KΩ	0V.	0Ω
4	74VDC	72KΩ	-.35VDC	1 Meg.
5	-7VDC§	25KΩ	0V.	0Ω
6	0V.	0Ω	56VDC	340KΩ
7	12VAC	12Ω	12VAC	12Ω
8	0V.	4 Meg.	0V.	0Ω

Pin No.	50L6GT Volt.	50L6GT Res.	35Z5GT Volt.	35Z5GT Res.
1	0V.	0Ω	82VDC	70KΩ
2	23VAC	24Ω	97VAC	97Ω
3	95VDC	70KΩ	92VAC	90Ω
4	82VDC	70KΩ	107VAC	155Ω
5	0V.	540KΩ	117VAC	225Ω
6	0V.	INF.	102VDC	70KΩ
7	69VAC	67Ω	69VAC	67Ω
8	4.2VDC	120Ω	125VDC	70KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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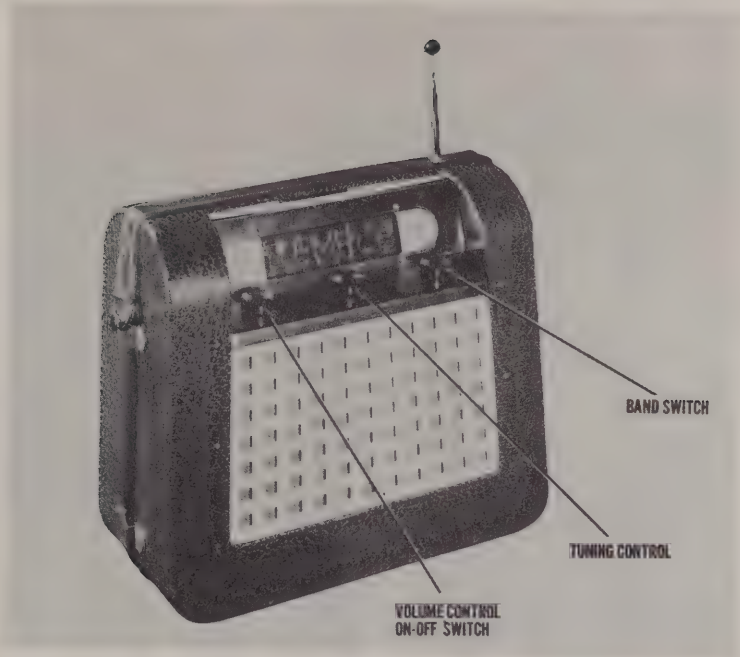
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

4718-32

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

TEMPLE MODEL G-521
BATTERY OPERATED



TEMPLE MODEL G-521
BATTERY OPERATED

TEMPLE MODEL G-521

TRADE NAME	Temple, Model G-521
MANUFACTURER	Templetone Radio Mfg. Corp., New London, Conn.
TYPE SET	Three Power Portable Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 1LA6 Converter, 1LN5 1st IF Amp., 1LN5 2nd IF Amp., 1LH4 Det.-AVC-AF, 3LF4 Power Output.
POWER SUPPLY RATING	110-120 Volts AC-DC or 9 Volt "A" Supply & 90 Volt "B" Supply .150 Amp. @ 117 Volts AC or 60MA @ 9 Volts DC & 6MA @ 90 Volts DC
TUNING RANGE—BROADCAST	535-1620KC **SHORT WAVE** 5.6-18.5MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD.	High side to stator of left section of tuning capacitor. Low side to B-.	455KC	BC (counter clockwise)	Tuning capacitor fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD. to reduce hum modulation.
2	.01 MFD. in series with 400Ω carbon resistor	High side to ext. ant. Low side to chassis.	18.5MC	SW (clockwise)	"	"	A5	Adjust for maximum output.
3	"	"	6.0MC	"	Tune for maximum output.	"	A6	Rock tuning capacitor and adjust for maximum output. Repeat Step 2.
4	"	"	18.0MC	"	"	"	A7	Rock tuning capacitor and adjust for maximum output.
5		Loop	1620KC	BC	Tuning capacitor fully open.	"	A8	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
6		"	1550KC	"	Tune for maximum output.	"	A9	Adjust for maximum output.
7		"	600KC	"	"	"	A10	Rock tuning capacitor and adjust for maximum output.
								Repeat Steps 5, 6 & 7 until no further improvement can be made.

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DATE 11/47 SET #28 FOLDER #4718-33

PARTS LIST AND DESCRIPTIONS

TEMPLE MODEL G-521
BATTERY OPERATED

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1LA6	1LA6	7AK	
2	1st IF Amp.	1LN5	1LN5	7AO	
3	2nd IF Amp.	1LN5	1LN5	7AO	
4	Det.-AVC-AF	1LH4	1LH4	5AG	
5	Power Output	3LF4	3LF4	6BB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TEMPLE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	CE1-4A81		DY-419	EL452	AF888D	UP44315C	♠ Filter
B	40	150							■ "
C	40	150							▲ "
D	20	150			M-20-150	UT201	PRS150-20	BR4015	● "
7	25	25	CE86	TC26	M-25-25	TA-25	PRS25-25	BR252A	Filament Bypass
8	25	25	CE86	TC26	M-25-25	TA-25	PRS25-25	BR252A	" "
9	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	Output Plate Bypass
10	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	Audio Coupling
11	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	" "
12	.003	600		TP406	S-6-003	TC-23	684-003	DT6D3	Tone Compensation
13	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
14	.01	600		TP410	S-4-01	TC-11	684-01	DT6S1	Conv. Screen Bypass
15	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Filament Bypass
16	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	" "
17	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	" "
18	.1	400		TP428	MPH-4-1	TC-1	484-.1	DT4P1	Line Filter
19	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	Isolation
20	.2	400		TP429	S-4-2	TC-2	484-.2	DT4P2	RF Bypass Power Supply
21	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
22	100			MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Oscillator Grid
23	15					MS-415			Fixed Trimmer
24	5100								Fixed Padder
25	100			MC235	MO.5-31	1FM-31	1468-0001	5W5T1	AF Plate Bypass
26	100			MC235	MO.5-31	1FM-31	1468-0001	5W5T1	RF Bypass
27	100			MC235	MO.5-31	1FM-31	1468-0001	5W5T1	IF Coupling
28	470			MC245	MO.5-35	1FM-35	1468-0005	5W5T5	Tone Compensation

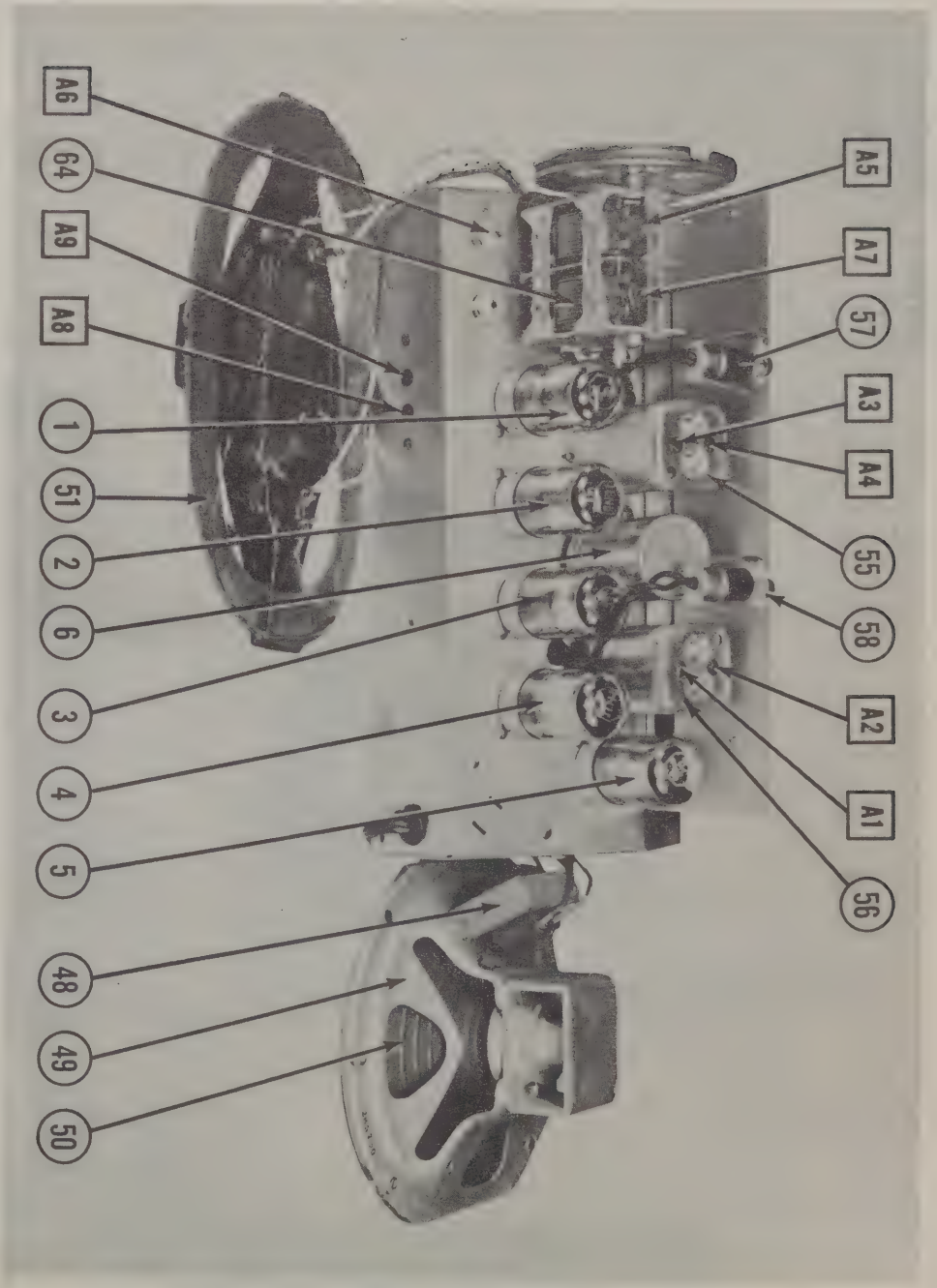
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TEMPLE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
29A	500KΩ	½	RP10-504	TM230	D13-133X	AT-78	Volume Control
B	Shaft		Not Req.	S825	E	KSS-3	Attach to 29A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TEMPLE PART No.	IRC PART No.	IDENTIFICATION CODES
30	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Oscillator Grid
31	39KΩ	½		BTS-39K	Or.-White-Or. Converter Screen Dropping
32	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
33	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
34	33KΩ	½		BTS-33K	Or.-Or.-Or. IF Plate Load
35	3.9 Meg.	½		BTS-3.9 Meg.	Or.-White-Grn. AVC Network
36	33KΩ	½		BTS-33K	Or.-Or.-Or. Tone Compensation
37	3.9 Meg.	½		BTS-3.9 Meg.	Or.-White-Grn. AF Grid
38	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
39	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Output Grid
40	47Ω	½		BW-½-47	Yl.-Vi.-Blk. Parasitic Suppressor
41	47KΩ	½		BTS-47K	Yl.-Vi.-Or. IF Grid
42	820Ω	½		BTS-820	Gray-Red-Br. Filament String
43	820Ω	½		BTS-820	Gray-Red-Br. " "
44	15Ω	1		BW-1-15	Surge Limiter
45	330Ω	1		BW-1-330	Or.-Or.-Br. Pilot Light Shunt
46	2200Ω	1		BTA-2200	Red-Red-Red Filter
47A	1200Ω	10		AB-1250	Filament String
B	1350Ω			AB-1250	" "

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		TEMPLE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
48	6600Ω	3.8Ω	470Ω	.6Ω	Part of EH-11	A-3678	T22S47	A-2931	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			TEMPLE PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-108		
49	PM	3.8Ω	EH-11	Mod. P6-X		
	CONE DIA.	VC DIA.				
50	6"	3/4"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	TEMPLE PART No.	MEISSNER PART No.	
51	Loop Ant.	.1Ω	2Ω	LL-13		
52	SW Ant.Coil		0Ω	LR-11		
53	BC Osc. Coil	1Ω	5Ω	LO-8	14-1040	
54	SW Osc. Coil	.3Ω	.1Ω	LO-7		
55	Input IF	11Ω	20Ω	TM2-14	16-6658	
56	Output IF	14Ω		TM2-15	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					TEMPLE PART No.		
57	Bayonet	2.0	.06	Pink			Type 49
58	"	"	"	"			" "

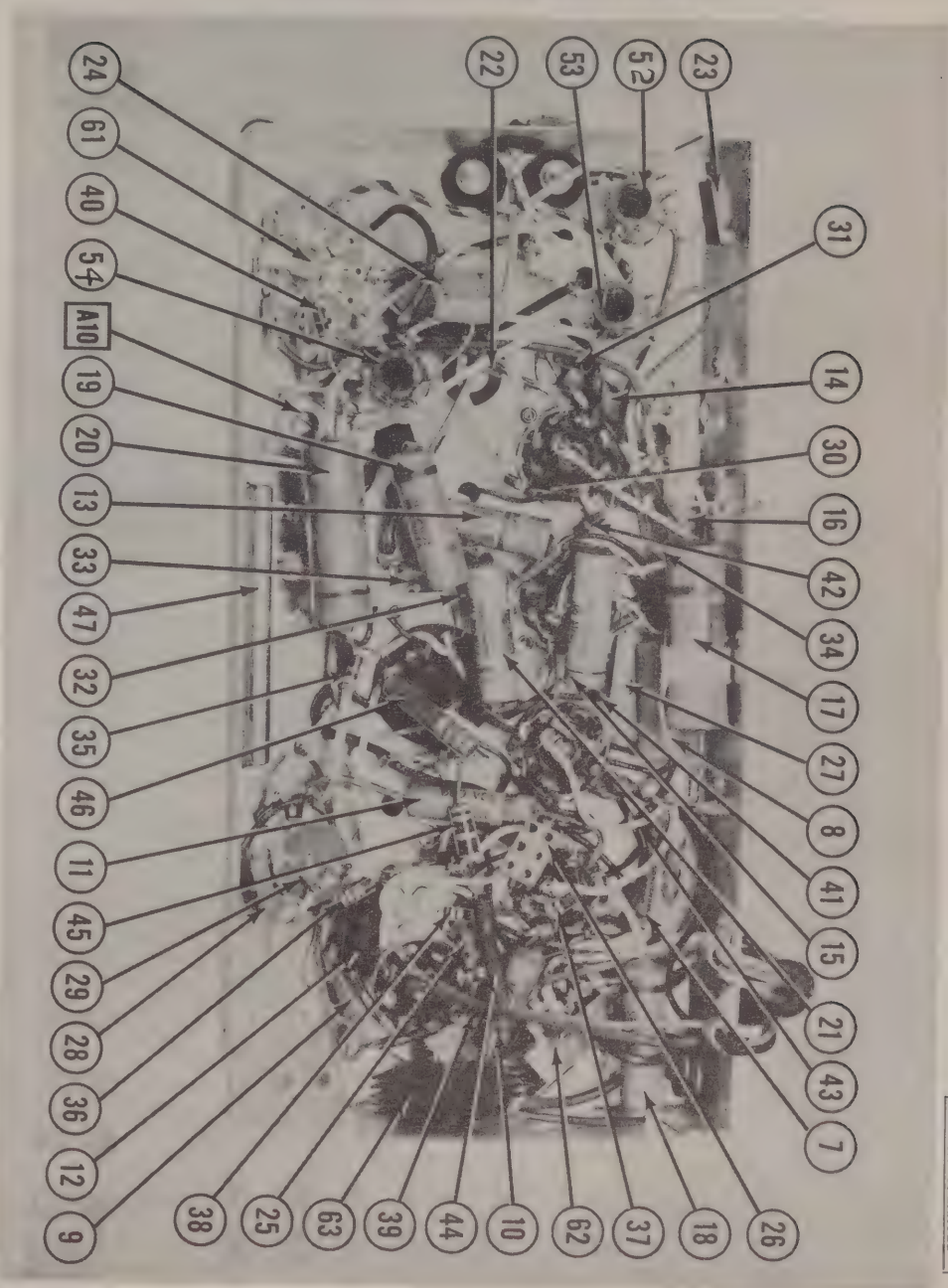
BATTERIES

ITEM No.	VOLTAGE	TEMPLE PART No.	EVEREADY			INSTALLATION NOTES
			"A"	"B"	"A-B"	
59	9V "A"		(2)#476			2 Used in Series
60	90V "B"			(2)#482		" " " "

MISCELLANEOUS

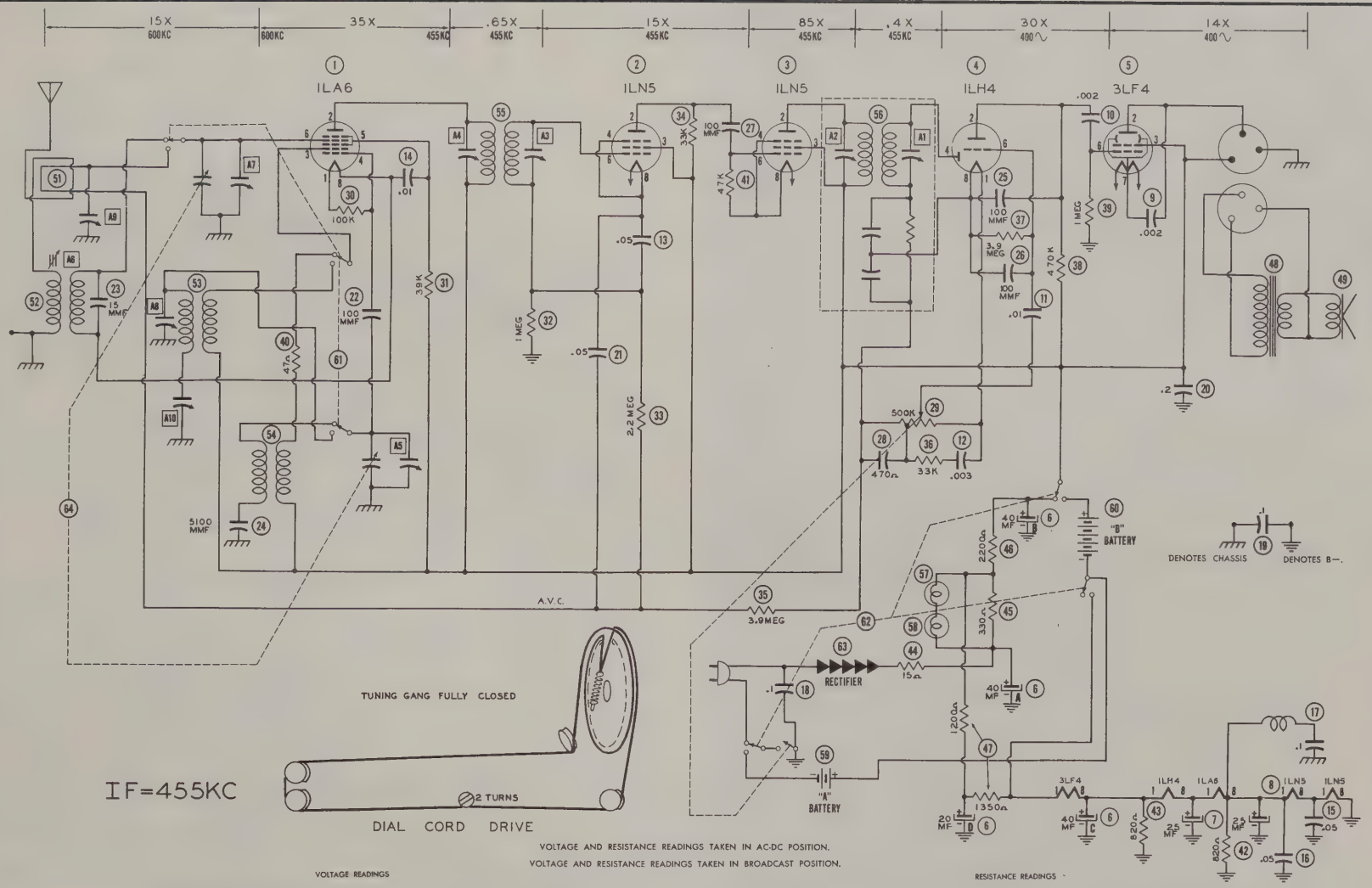
ITEM No.	PART NAME	TEMPLE PART No.	NOTES
61	Bandswitch		
62	Switch		Power Change-Over (TPDT)
63	Rectifier		Selenium
64	2 Gang Var. Cap.	CV-14	19-478 MMF (each section)

CHASSIS—BOTTOM VIEW



TEMPLE MODEL G-521
BATTERY OPERATED

TEMPLE MODEL G-521
BATTERY OPERATED



VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LA6	4VDC	92VDC	92VDC	-5.6VDC§	45VDC	.2VDC	92VDC	2.6VDC
2	1LN5	2.6VDC	55VDC	92VDC	1.3VDC	1.3VDC	.1VDC	0V.	1.3VDC
3	1LN5	1.3VDC	92VDC	92VDC	0V.	0V.	0V.	0V.	0V.
4	1LH4	5.2VDC	68VDC	4VDC	1.2VDC	92VDC	.2VDC	0V.	44VDC
5	3LF4	7.5VDC	90VDC	92VDC	0V.	0V.	0V.	6.5VDC	5.2VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LA6	*	4.7KΩ	4.7KΩ	100KΩ	44KΩ	2 Meg.	4.7KΩ	*
2	1LN5	*	38KΩ	4.7KΩ	*	*	1 Meg.	0Ω	*
3	1LN5	*	4.7KΩ	4.7KΩ	0Ω	0Ω	50KΩ	0Ω	0Ω
4	1LH4	*	475KΩ	*	600KΩ	4.7KΩ	4 Meg.	0Ω	*
5	3LF4	*	5KΩ	4.7KΩ	INF.	0Ω	1.1 Meg.	*	*

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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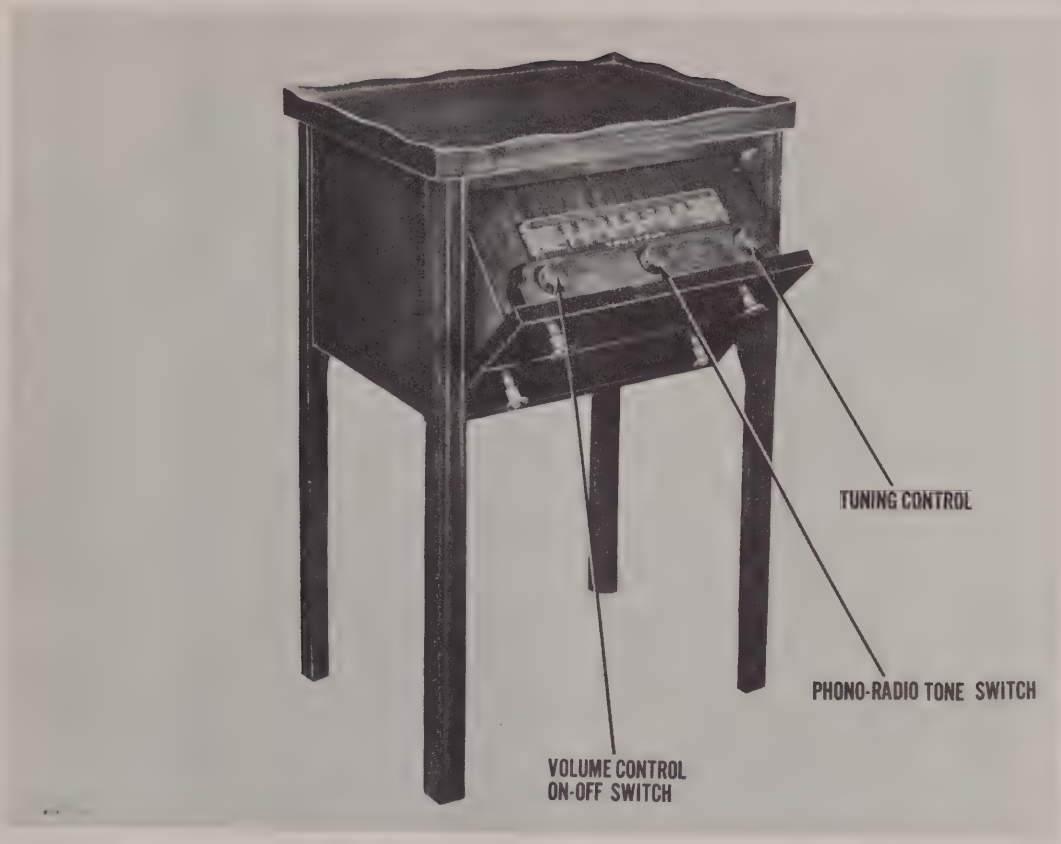
4718-33

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by connecting a jumper across the two outside terminals of the volume control during stage gain measurements.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

TRUETONE
MODEL D-1612



TRUETONE
MODEL D-1612

TRUETONE MODEL D-1612

TRADE NAME	Truetone, Model D-1612
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC Operated Superheterodyne Receiver - Self Contained Loop Antenna
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	535-1620KC RATING .500 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Set volume control at maximum volume and keep output of signal generator no higher than is necessary to obtain an output reading. Keep chassis and loop in same relative position as they are in when mounted in cabinet. Use insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin #8 (grid) of 6SA7. Low side to chassis.	455KC	High freq. end. (Tuning control fully clockwise)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
2	100MMF	High side to ant. clip. Low side to chassis.	1620KC	"	"	A5	" " " "
3	100MMF.	"	1400KC	Tune for maximum output.	"	A6,A7	" " " "

DISASSEMBLY INSTRUCTIONS

1. Remove three push-on type control knobs.
2. Tilt the drawer to a partial open position. Lift up until assembly is free. Remove speaker plug from speaker then remove drawer from cabinet.
3. Remove four wood screws holding chassis to drawer. Remove from drawer.
4. Remove four screws holding dial assembly to chassis. Remove from chassis.
5. Remove four hex nuts holding speaker in cabinet. Remove speaker from cabinet.

HOWARD W. SAMS & CO., INC. Indianapolis · Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	15	450	25688	FP339	DY-312	EL-353	AF44J	UP6BJ38	■ Filter
B	15	450							▲ "
C	20	25					PRS25-25	BR202A	Cath. Bypass
8	.005	600		TP408	MPH-6-005	TC-25	684-005	DT6D5	Line Bypass
9	.005	600		TP408	MPH-6-005	TC-25	684-005	DT6D5	" "
10	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	Audio Coupling
11	.005	400		TP408	S-6-005	TC-25	484-005	DT6D5	Tone Compensation
12	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
13	.005	400		TP408	S-6-005	TC-25	484-005	DT6D5	Audio Coupling
14	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	" "
15	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	Screen Bypass
16	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	IF Cathode Bypass
17	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
18	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
19	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
20	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Ant. Coupling
21	200	500		MC237	MO.5-32	1FM-32	1468-0002	5W5T2	Audio Plate Bypass
22	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid Capacitor

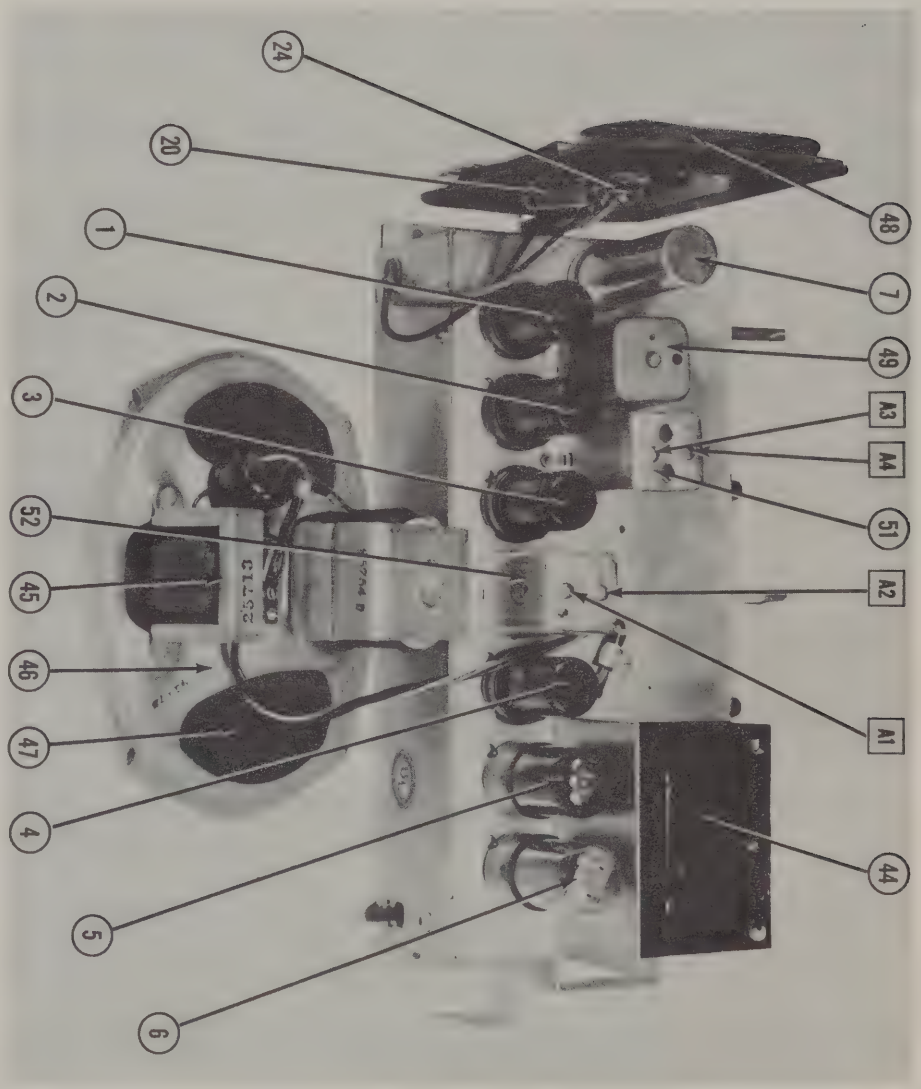
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23A	2.2 Meg	1	25690	TM254	D13-139X	T-115	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 23A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
24	1000Ω	½		BTS-1000	Br.-Blk.-Red Antenna Loading
25	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AVC Network
26	470Ω	½		BTS-470	Yl.-Vi.-Br. RF Cathode
27	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AVC Network
28	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
29	470Ω	½		BW-1-470	Yl.-Vi.-Br. IF Cathode
30	22KΩ	2		BT-2-22K	Red-Red-Or. Screen Dropping
31	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
32	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Diode Load
33	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue 1st AF Grid
34	220KΩ	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
35	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Feedback
36	220KΩ	½		BTS-220K	Red-Red-Yl. Output Grid
37	330Ω	2		BW-2-330	Or.-Or.-Br. Output Cathode
38	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. Tone Compensation
39	22KΩ	½		BTS-22K	Red-Red-Or. Tone Compensation
40	33KΩ	½		BTS-33K	Or.-Or.-Or. Tone Compensation
41	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Series Phono
42	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Phono Shunt
43	3.3Ω	½		BW-½-3.3	Or.-Or.-Gold Series Pilot Light

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	TRUETONE PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
44	117V AC @ .5A	620V CT @ .062A	5.1V AC @ 1.8A	6.4V AC @ 1.9A	25723	P-6120†*	T22R02*	P-2952

*Drill new mounting holes. †Use universal mounting brackets.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		TRUETONE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
45	3300Ω	3.3Ω	240Ω	.25Ω	25713	A-3823	T22S46	A-2902	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			TRUETONE PART No.	JENSEN PART No.		
	FIELD RES.	VC IMP.		ST-4351		
46	800Ω	3.3Ω	25712	Mod. F8-RS		Alternate Part No. 25754.
	CONE DIA.	VC DIA.				
47	7-3/8"	3/4"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

†Shunt field coil with 4000Ω 2 watt resistor.

R F COILS

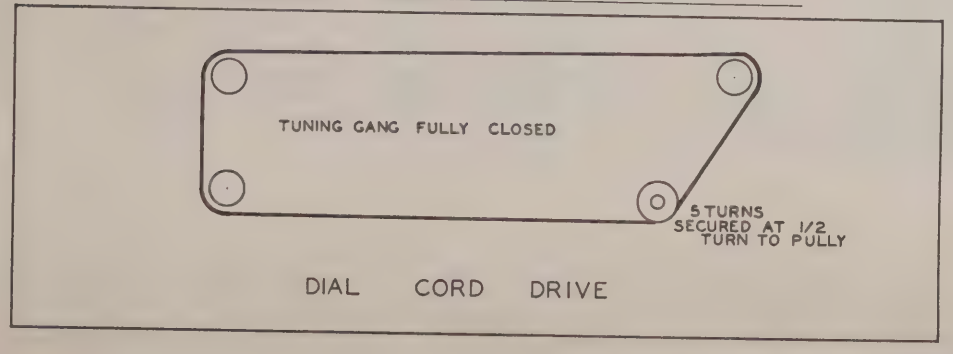
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	TRUETONE PART No.	MEISSNER PART No.
48	Loop Ant.	.2Ω	1.5Ω	25750	
49	RF Coil	72Ω	6Ω	25597	14-7558
50	Osc. Coil		6Ω	25724	14-1040
51	Input IF	28.8Ω	28.5Ω	25715	16-6658
52	Output IF	32Ω		25714	16-6670

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					TRUETONE PART No.		
53	Bayonet	6-8	0.15	Brown			Type 47
54	"	"	"	"			"

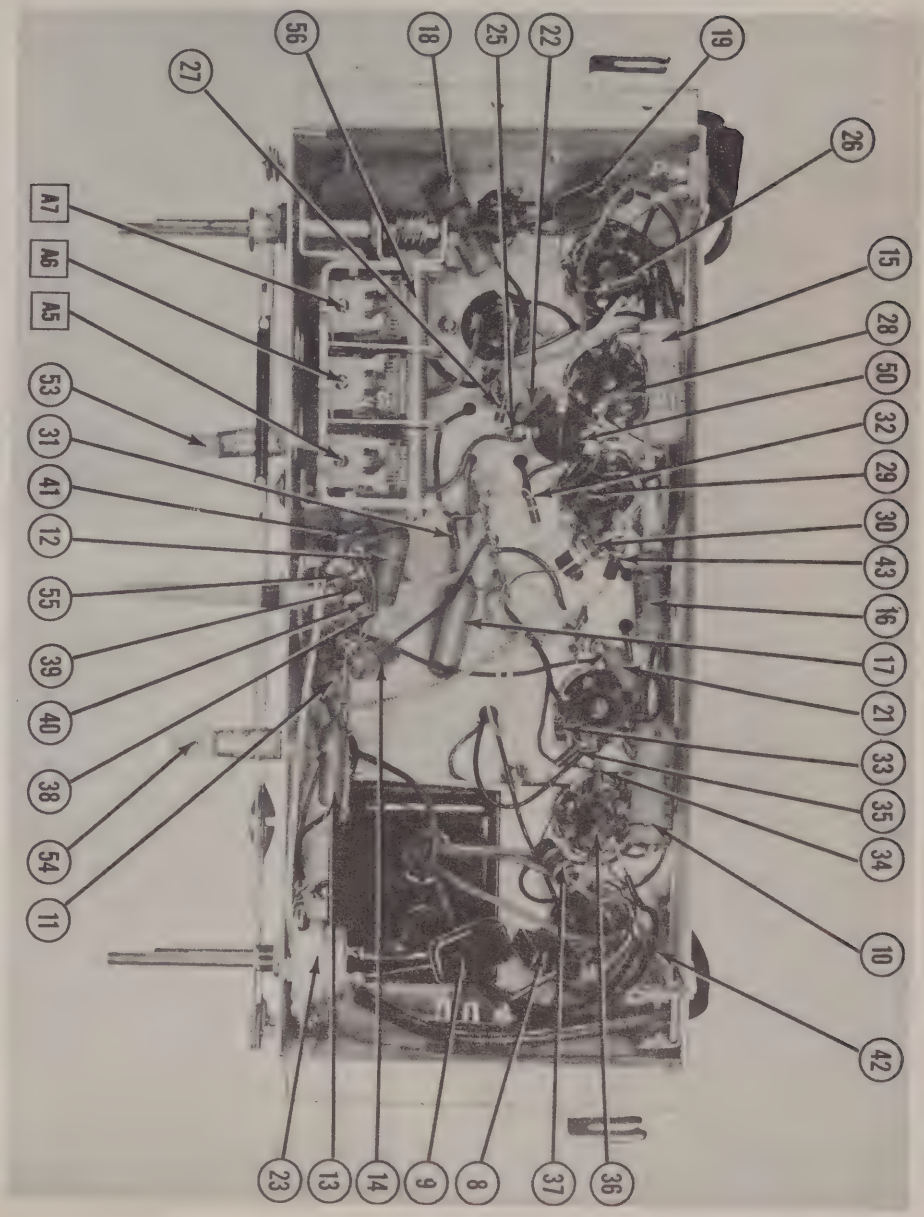
MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
55	Switch	25562	Radio-Phono-Tone
56	3 Gang Var. Cap.	25592	31-427MMF, 31-427MMF, 38-200MMF
	Dial Scale	25579	
	Dial Pointer	25578	



DIAL CORD DRIVE

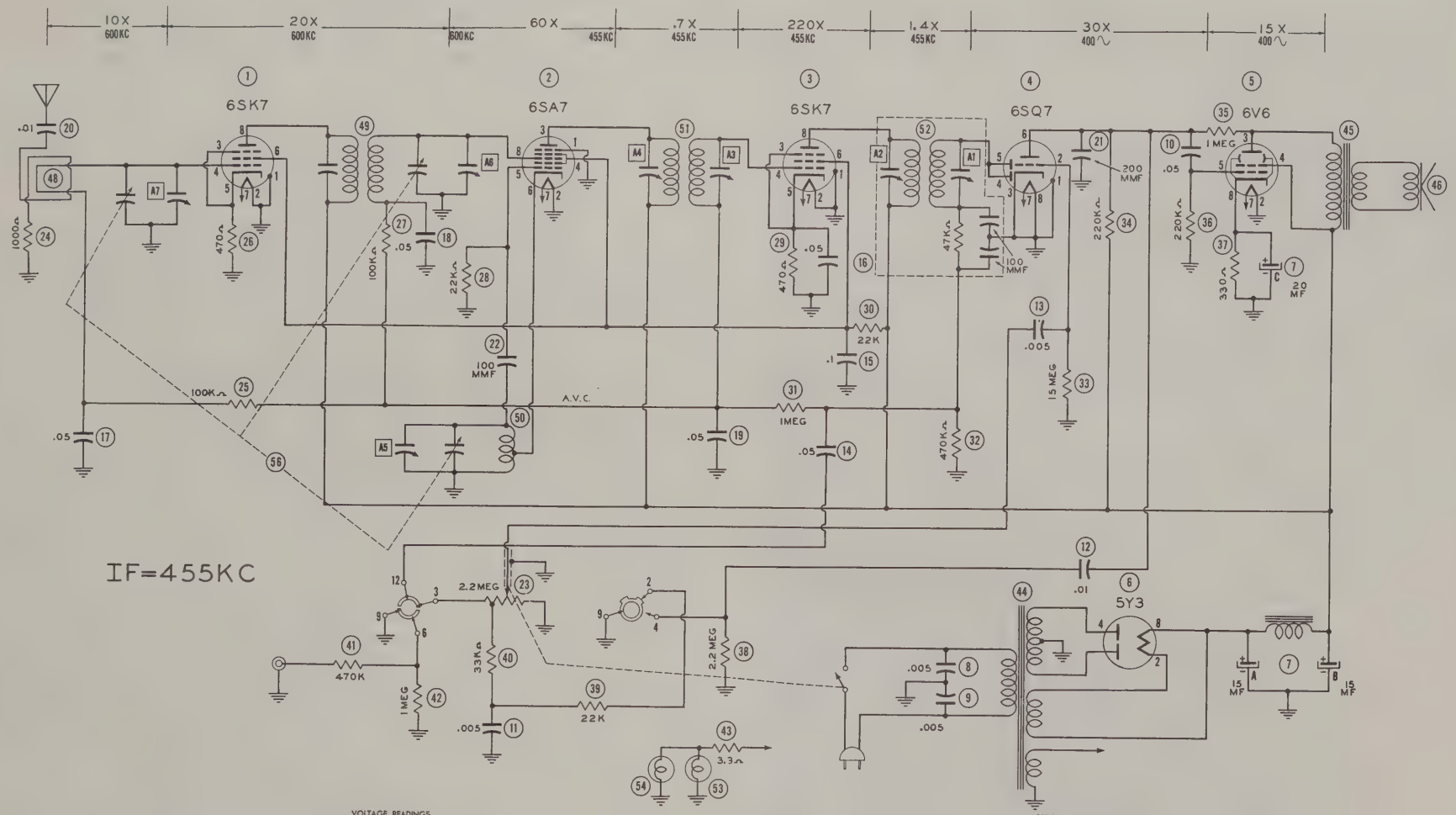
CHASSIS—BOTTOM VIEW



DATE 11/47 SET #28 FOLDER #4718-34

TRUETONE MODEL D-1612

TRUETONE MODEL D-1612



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	3.2VDC	-.2VDC	3.2VDC	75VDC	6.4VAC	275VDC
2	6SA7	0V.	0V.	275VDC	75VDC	-9VDC§	0V.	6.4VAC	-.3VDC
3	6SK7	0V.	0V.	2.6VDC	-.3VDC	2.8VDC	75VDC	6.4VAC	275VDC
4	6SQ7	0V.	-.5VDC	0V.	-.45VDC	-.45VDC	125VDC	6.4VAC	0V.
5	6V6GT	0V.	0V.	265VDC	275VDC	0V.	0V.	6.4VAC	15VDC
6	5Y3GT	0V.	330VDC	0V.	310VAC	0V.	310VAC	0V.	330VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	470Ω	1.5 Meg.	470Ω	160KΩ	.1Ω	140KΩ
2	6SA7	0Ω	0Ω	140KΩ	160KΩ	22KΩ	.5Ω	.1Ω	1.5 Meg.
3	6SK7	0Ω	0Ω	470Ω	1.4 Meg.	470Ω	160KΩ	.1Ω	140KΩ
4	6SQ7	0Ω	15 Meg.	0Ω	500KΩ	500KΩ	360KΩ	.1Ω	0Ω
5	6V6GT	0Ω	0Ω	140KΩ	140KΩ	240KΩ	INF.	.1Ω	330Ω
6	5Y3GT	INF.	140KΩ	INF.	145Ω	INF.	155Ω	INF.	140KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDUCTION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4718—34

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GENERAL INFORMATION

The Philco Model M-7 is designed to play automatically single 10-inch or 12-inch records. To load the player, open the door in front and slide a 10-inch or 12-inch record through the slot to its stop. As the door is closed, the pickup arm is placed on the record and the drive mechanism is started. Upon completion of the record, the motor is automatically turned off. The door may be opened any time without injury to the mechanism.

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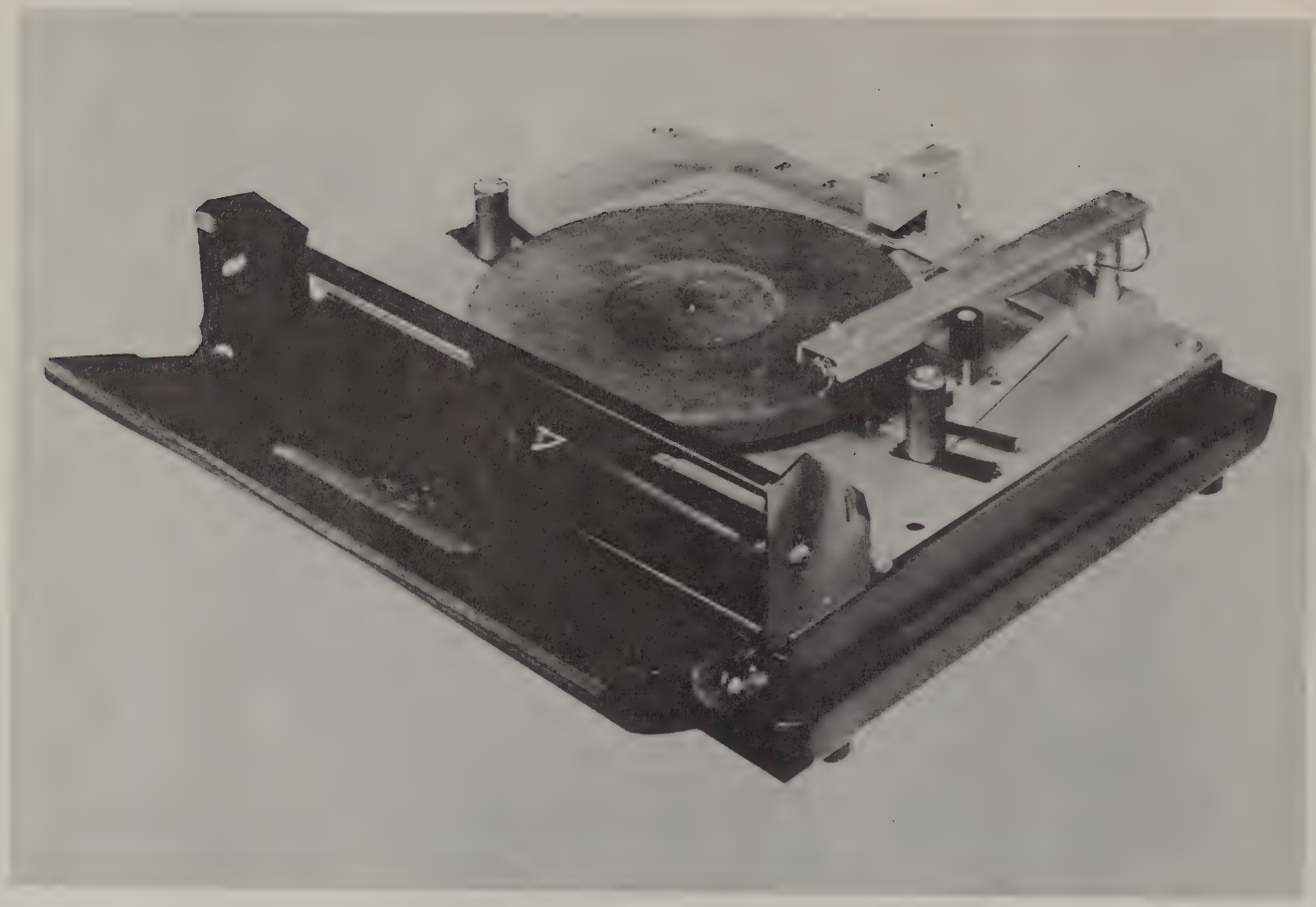
PHILCO
MODEL M-7

PHILCO
MODEL M-7



PLAYER MECHANISM—TOP VIEW

OPERATING PROCEDURES

The record player is controlled by the movement of the slide lever (34), and the indexing levers (16) and (24).

The slide lever which is connected to the door by the connector bar (50) is moved forward and backward by the action of the door opening and closing. When the door is opened, the slide lever is moved forward; in doing so, the record spindle (19) is retracted through the action of the connector block (20A), which is connected to the spindle and the spindle spring (48) riding in the diagonal slot of the slide lever. If a record is playing when the door is opened the trip spring (34B) of the slide lever comes in contact with the trip switch lever (46) as it moves forward, thus turning the motor off.

Also as the slide lever (34) moves forward, the spring (35) and the drive cord assembly (36), which is connected to the slide lever and the pickup arm (5) working through the bracket and pulley assembly (37), raises the pickup arm and moves it out to contact the pickup arm index pin (15).

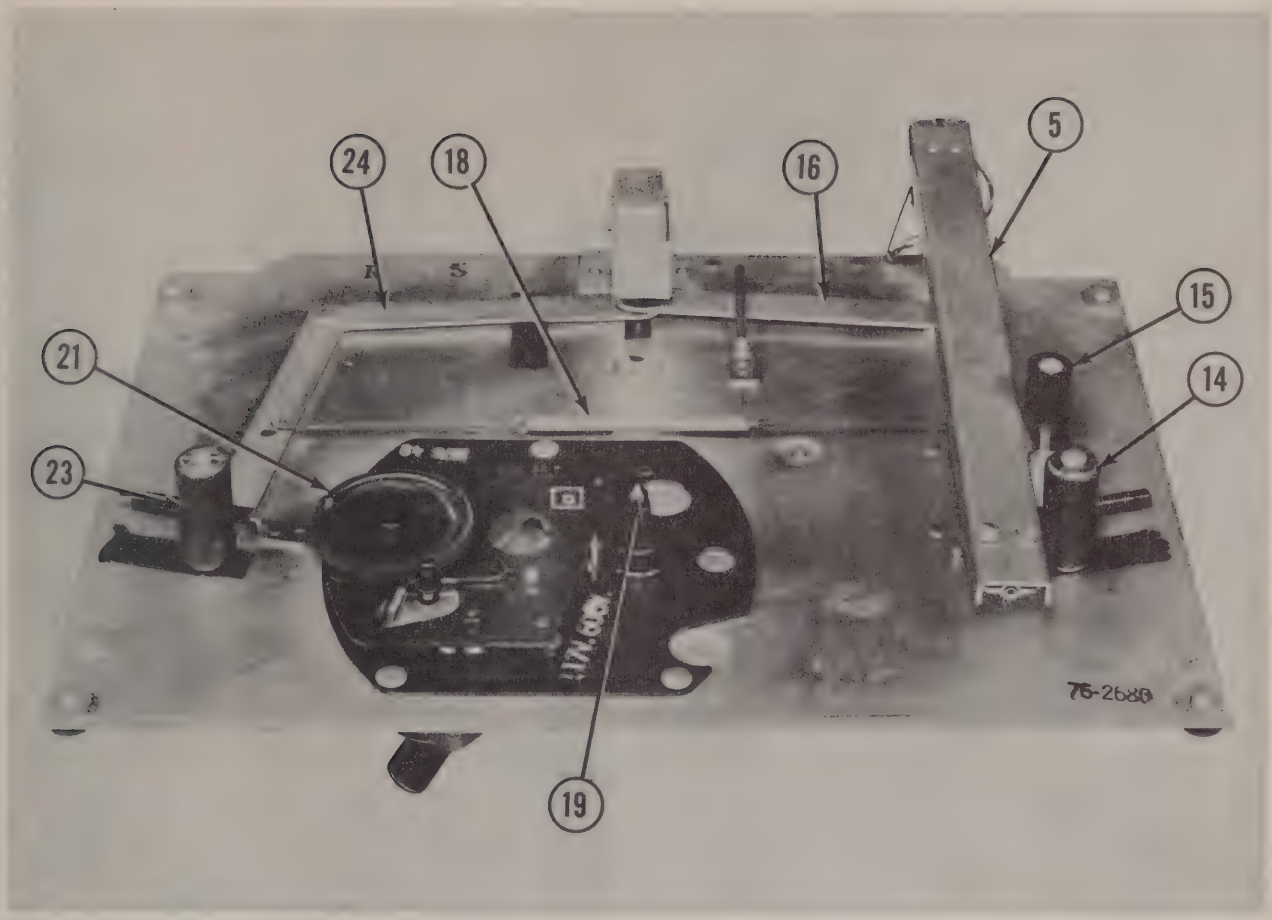
When a 10-inch record is pushed into the slot, it is guided into place coming to a rest position against the hinged part of the rear-index bracket assembly (1); therefore, the hole of the record is approximately centered on the turntable.

When the door is closed, the slide lever is moved back; thus the record spindle (19) is extended through the hole in the record positioning the record accurately for the pickup arm set-down, the motor is turned on, and the pickup arm is lowered to the record.

When the pickup arm rides into the eccentric groove of the record, the motor is turned off by the action of the trip lever actuating the mercury trip switch.

When a 12-inch record is pushed into the slot, the guide rollers (14) and (23) are moved outward, thus operating the index levers (16) and (24) which raises the hinged part of the index bracket, setting it for 12-inch position. The pickup index pin (15), which is mounted on the index lever (16), moves outward allowing the pickup arm to be positioned for 12-inch set-down.

When the door is closed on a 12-inch record, the



PLAYER MECHANISM—TOP VIEW—LESS TURNTABLE

record spindle (19) is extended through the hole of the record positioning it accurately for the pickup arm set-down. The motor is turned on and the pickup arm is lowered to the record. The stud (D) of the index lever (24), which is pivoted forward through the action of the index lever, is engaged by the lock-out cam (34A) which pulls the stud forward. This causes the guide rollers to move away from the record, permitting the record to have free movement. At the end of the record the pickup arm riding in the eccentric groove causes the trip lever to actuate the mercury trip switch, thus turning the motor off.

ADJUSTMENTS

Pickup Arm Set-Down

1. See that the door of the record player is closed.
2. Lift the pickup arm until the needle is slightly above the turntable.
3. Hold the pickup arm lightly against the pickup arm index (15).
4. Using a 3/8" open-end wrench on the hex shoulder of the eccentric-mounted pickup arm index pin, turn the pin until the distance between the edge of the spindle (19) to the needle is 4 11/16".

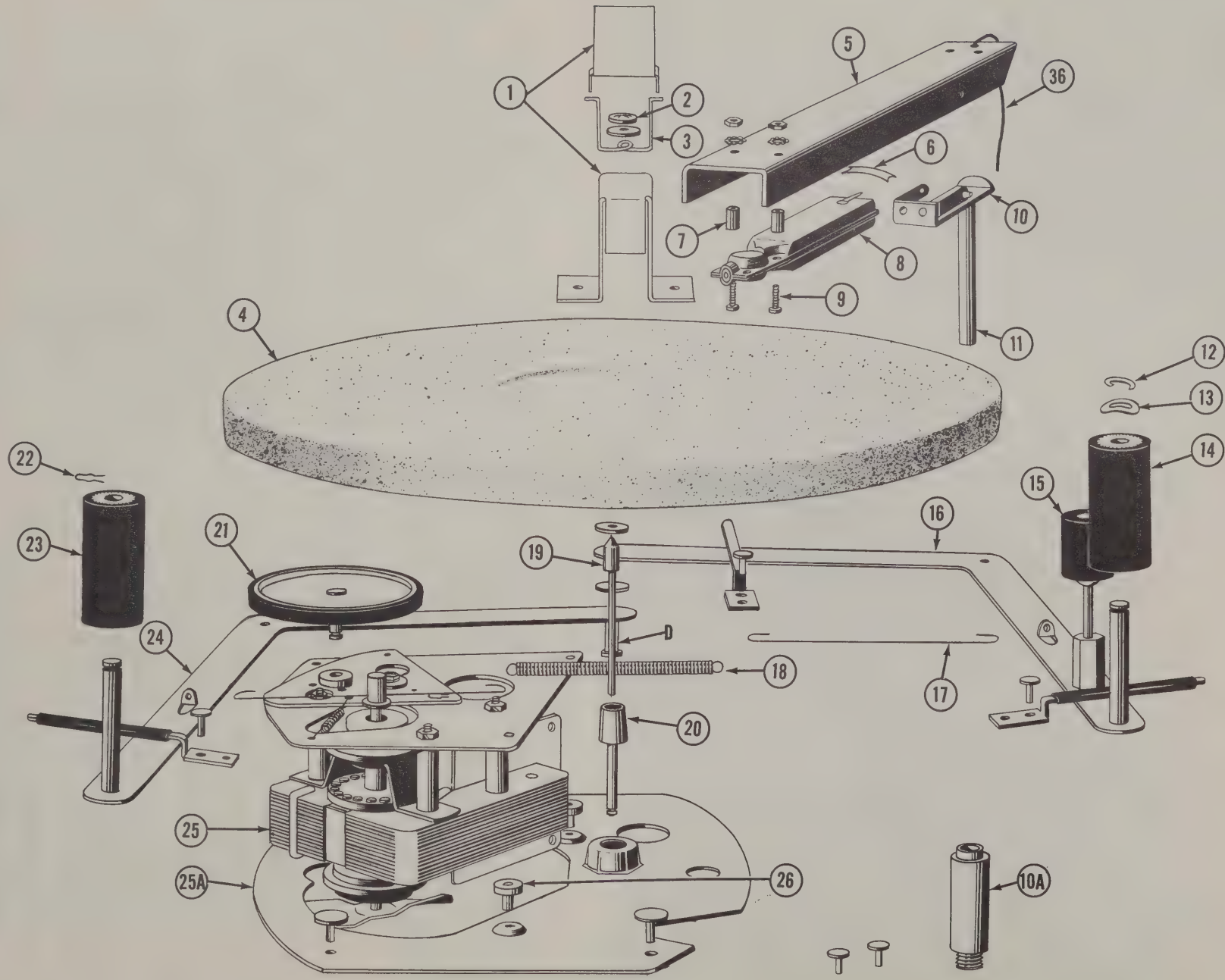
Index-Lever Assembly

The index-lever adjustment determines the clearance between the guide rollers (23) and (14) and the edge of a 10-inch record:

1. Place a 10-inch record on the turntable and close the door.
2. Loosen the nut that holds the adjusting cam (33).
3. Turn the cam until the distance between the guide rollers and the edge of the record is 1/16".
4. Hold the cam firmly and tighten the nut.
5. Try several 10-inch records on the turntable. If the guide rollers contact any of these records with the door closed, repeat the adjustment.
6. After the adjustment is satisfactory, readjust the pickup arm set-down, since this is changed by the adjustment of the index-lever cam (33).

Pickup Arm Trip Lever

This adjustment is made to obtain the proper relationship between the pickup arm and the trip lever (42) so when the pickup arm oscillates in the eccentric


1
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10A

A PHOTOFACT "EXPLODED" VIEW

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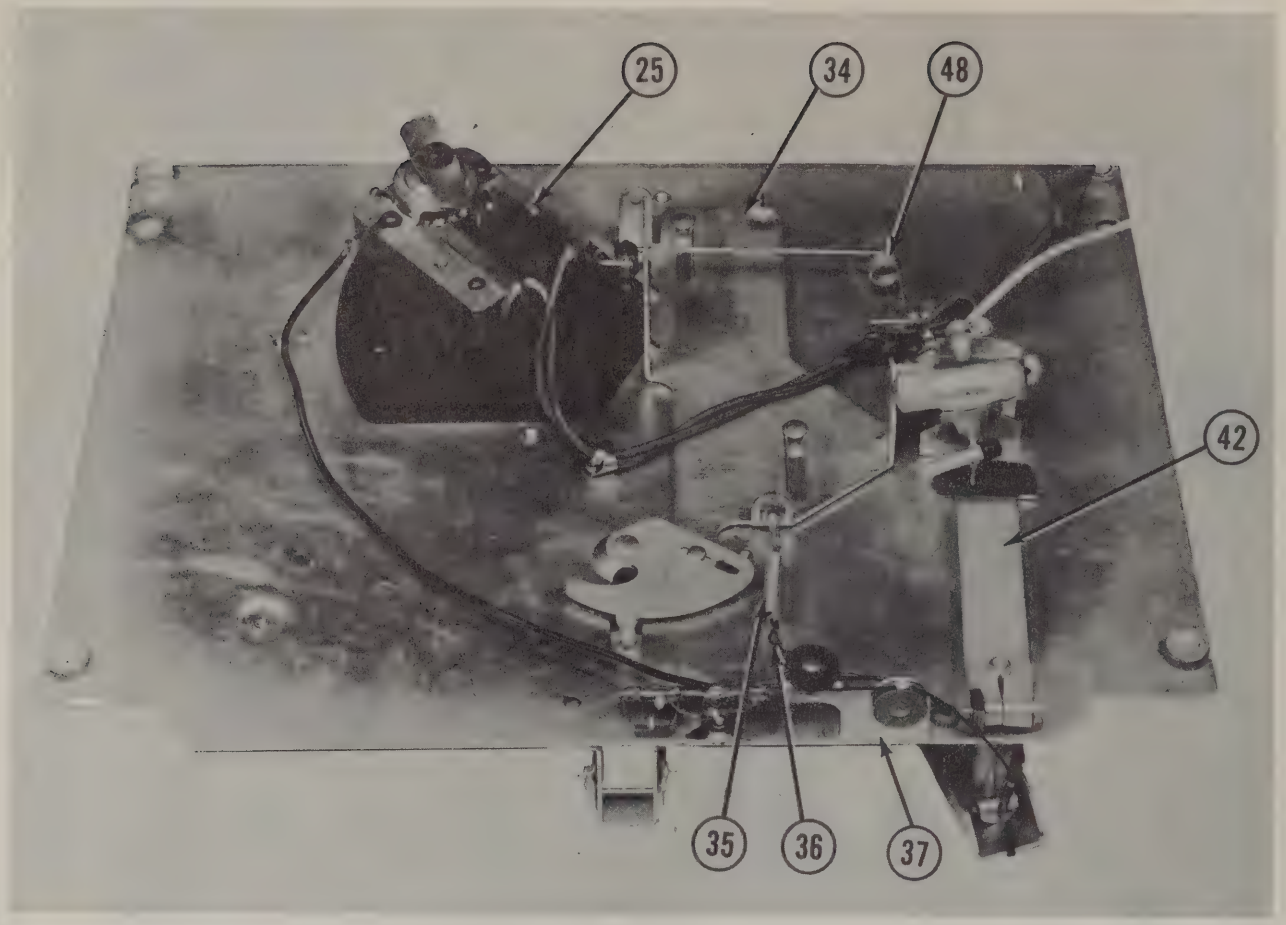


PLAYER MECHANISM—BOTTOM VIEW—REAR

groove of the record it will cause the trip lever to actuate the mercury switch (44) and turn off the motor:

1. See that the door of the record player is closed.
2. Loosen the screw (41) of the trip lever (42).
3. Hold the pickup arm against the pickup arm index pin (15).
4. Move the trip lever out until the abrasive-coated portion is ¾″ to ⅞″ from the edge of the motor board.
5. Check the pickup arm spindle; there should be just enough play (.003″ to .005″) to allow the pickup arm to move freely throughout its range. The abrasive-coated end of the trip lever should be close to the motor board and should swing throughout its range without scraping.
6. Tighten the clamp screw (41).
7. When this adjustment is properly made, the trip mechanism should operate through a range between 1½″ and 3″ from the center of the record spindle.

Trip Switch Lever

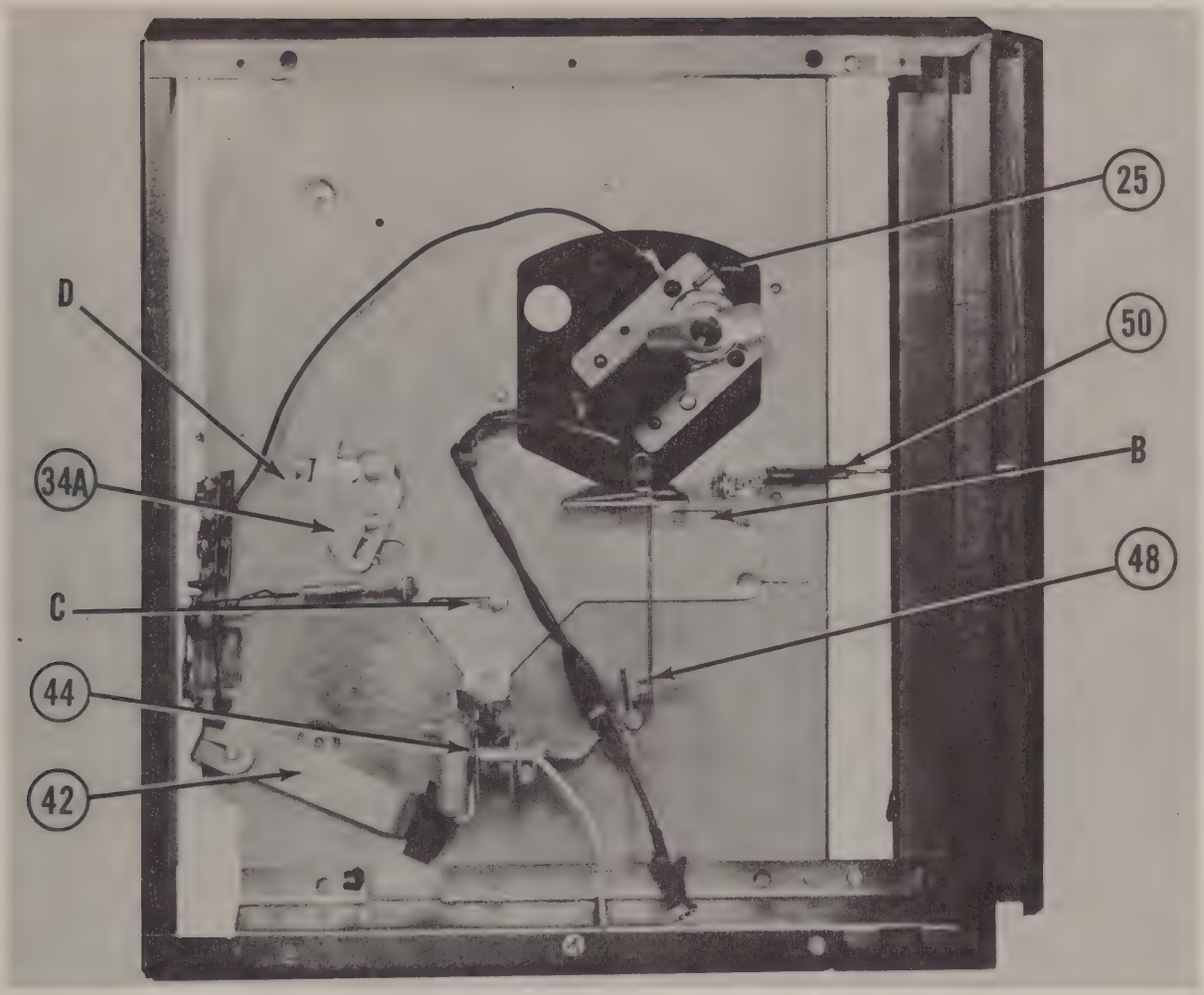
This adjustment is made so as to be turned off or on as the door is opened or shut:

1. Loosen the screw (47) in the trip switch lever (46).
2. Open the door of the record player.
3. Tilt the switch (44) outward; the lever carrying the trip pawl should be against the stop of the bracket.
4. Adjust the trip switch lever (46) so that it will contact the underside of the trip spring (34B) near the top of the spring as the door is closed. When the door is opened the trip switch lever should contact the upper surface of the trip spring near the lower tip of the spring.
5. Open and close the door several times, observing the upper and lower contacts of the trip switch lever (46) and the spring (34B); adjust the trip switch lever until it makes contact at equal distance from the tips of the spring as it moves forward and backward as the door is opened and shut.

Spindle Height

The record spindle (19) should be adjusted so that when the door is shut it will engage the hole in the record when the door is closed:

1. Open the door of the record player. No record should be used.
2. Loosen the Allen set screw holding the connector block (20A).



PLAYER MECHANISM—BOTTOM VIEW

3. Adjust the height of the spindle until the top of the spindle (19) is flush with the top of the spindle bushing (20). Tighten the Allen set screw.

Connector Bar

This adjustment is made in order to have the correct position of slide-lever assembly with respect to the door:

1. Open the door to its limit (do not force).

2. Loosen the two nuts on the threaded end of the connector bar (50).

3. Hold down the door and slide the slide-lever (34) forward until it is stopped by the shoulder rivets in the two straight slots. Hold the slide lever and door in this position and tighten the two nuts. Avoid an adjustment which places too much strain on the ears to which the threaded stud is fastened.

4. After making this adjustment, check the spindle (19) height; readjust if necessary.

LUBRICATION

It is recommended that the Philco automatic record player should be lubricated about once a year:

1. Apply a few drops of oil, such as Philco Part No. 60319, to the following parts:
   (a) Edges of slot under idler-wheel plate (the slot in which the guide pin rides).
   (b) Record spindle and bushing (19).
   (c) Pickup arm spindle (10A).
   (d) Idler-wheel bearing.

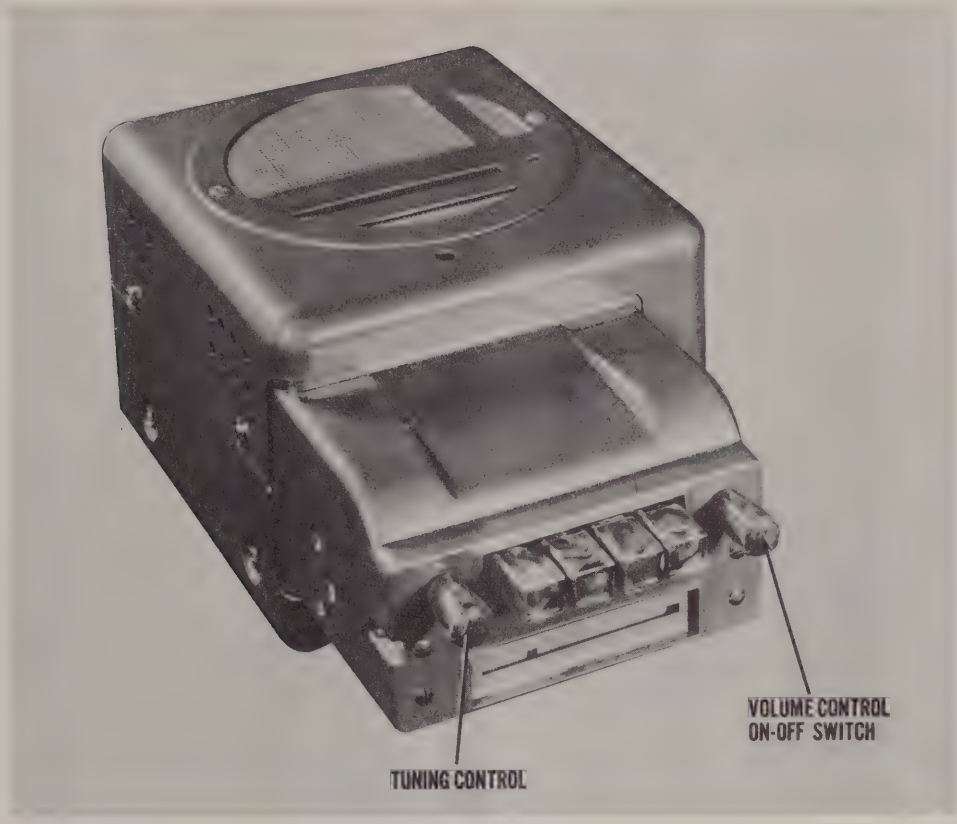
2. Clean off old grease with carbon tetrachloride and apply light grease or vaseline, such as Philco Part No. 60130, to the following points:
   (a) The two slots (B) and (C) of the slide lever (34).
   (b) The diagonal slot carrying the spindle spring.
   (c) Slot of the lock-out cam.

If any oil or grease should come in contact with the idler-wheel tire (21), or drive motor pinion, clean with carbon-tetrachloride.

Do not apply any lubrication to the pin on which the trip pawl swings.

PARTS LIST

Ref. No.	Part No.	DESCRIPTION
1	76-2095	Rear-index bracket assembly
2	1W56912FA4	Speed nut
	54-4290	Rubber washer
3	56-3117	Wire clip
4	35-2655	Turntable (Alliance)
	35-2656	Turntable (G1)
5	56-3131	Pickup arm
6	56-3206	Cable Retainer
7		Spacers for mounting crystal
8	35-2643	Crystal pickup
9	1W10583FA3	Screw No. 4-40 x ½"
10	76-2097	Spindle and bearing bracket assembly
10A	56-3119	Spindle bearing
11		Spindle (part of 10)
12		"C" clamp
13		Spring washer
14	54-4274	Index tire
	54-4273	Index roller
15	L-3338	Tubing (for index pin)
16	76-2093	Index lever assembly R.H.
17	56-3248	Extension (index spring)
18	56-3118	Index spring
19	56-3113	Spindle
20		Spindle bushing
20A	75-2537	Connector block
	76-2102	Connector block used in earlier production
21	76-2374	Idler wheel, with tire (Alliance Motor)
	76-2375	Idler wheel, with tire (G1 Motor)
22	57-1468FA3	Hair pin clip
23	54-4274	Index tire
	54-4273	Index roller
24	76-2094	Index lever assembly (L.H.)
25	35-1309-1	Motor (Alliance)
	35-1309-2	Motor (G1)
25A		Motor and spindle mounting plate
26		Motor spacers
27	27-4596	Grommet
	56-1505	Spacer
28	56-3201	Motor board
29	54-4291	Felt pad
30		6-32 x ½ motor mounting screw
31		Spring washer
32		Flat washer
33	54-4275	Cam
34	76-2101	Slide lever assembly
34A		Lock-out cam (part of 34)
34B	56-3202	Slide lever assembly spring
35	28-9008	Spring
	56-3147	Spring used in earlier production
36	45-1420	Drive-cord kit
	76-2103	Cord and spring assembly used in earlier production
37	76-2100	Bracket and pulley assembly
38		Spring lock washer
39	1W12631FA3	Screw No. 6-32 x ½"
40	56-3120	Spindle-bearing nut
41	1W12655FA3	Screw No. 8-32
42	76-2264	Trip lever assembly
43	56-3135	Trip switch bracket
43A	56-3138	Trip switch spring
44		Mercury switch assembly
45		Nut (for screw, ref. No. 47)
46	56-3200	Trip switch lever
47	1W20248FA3	Switch assembly screw
48	56-3877	Spindle spring
49	56-3204	Shoulder rivet
50	76-2111	Connector bar and clip assembly



CORONADO
MODEL 43-5005

CORONADO
MODEL 43-5005

CORONADO MODEL 43-5005

TRADE NAME	Coronado, Model 43-5005
SUPPLIER	"Coronado", Minneapolis, Minn., - Los Angeles, Calif.
TYPE SET	Battery Operated Universal Automotive Receiver with Pushbutton Tuning
TUBES (FIVE)	Types, 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6K6GT Power Output, 6X5GT Rectifier
POWER SUPPLY	6 Volt Storage Battery
TUNING RANGE—BROADCAST	530-1600KC RATING 5.5 Amp. @ 6.3 Volts DC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 4 (grid) 6SK7. Low side to chassis.	455KC	Tuning slugs out completely	Across voice coil	A1,A2	Adjust for maximum output.
2	.1 MFD.	High side to Pin 8 (grid) of 6SA7. Low side to chassis.	"	"	"	A3,A4.	" " " "
3	30 MMFD	High side to ant. lead. Low side to chassis.	1600KC	"	"	A5,A6	" " " "
4	30 MMFD	"	1400KC	Tune for maximum output.	"	Ant. Coil(44)	Check to see if this adjustment is necessary by adjusting A6 for maximum output. If a large increase in output is obtained then the antenna coil must be adjusted. First repeat Step 3 (adjust A6 at 1600 KC for maximum output) then adjust position of antenna coil for maximum output at 1400KC.
5	30 MMFD	"	1600KC	Tuning slugs completely out	"	A6	Adjust for maximum output. If position of antenna coil was changed repeat Steps 4 and 5 until no further improvement can be made.

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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PARTS LIST AND DESCRIPTIONS

CORONADO
MODEL 43-5005

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	6SA7	6SA7	8R	
2	IF Amp.	6SK7	6SK7	8N	
3	Det.-AVC-AF	6SQ7	6SQ7	8Q	
4	Power Output	6K6GT	6K6GT	7S	
5	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	15	350	119-105	FP339	DY-310	EL-326	AF32K4A	UP2245C	■ Filter
B	15	350							▲ "
C	20	25							Cath. Bypass
7	.5	120	100-31						Hash Filter
8	.5	120	100-31						" "
9	.5	120	100-31						" "
10	.0035	1600	100-125	OW343	TM-16-004	TR-24	1684-004	MD16D4	Buffer
11	.01	600	100-87	TP410	S-6-01	TC-11	684-01	DT6S1	Output Plate Bypass
12	.02	400	100-26	TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
13	.002	600	100-25	TP405	S-6-002	TC-22	684-002	DT6D2	" "
14	.1	200	100-20	TP428	S-4-1	TC-1	484-.1	DT4P1	IF Cath. Bypass*
15	.05	400	100-13	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
16	.05	400	100-9	TP426	S-4-05	TC-15	484-05	DT4S5	Screen Bypass
17	220	500	C-8F3-10	MC240	MO.5-322	1FM-325	1468-00025	5W5T25	Hash Filter
18	250	500	129-12	MC240	MO.5-325	1FM-325	1468-00025	5W5T25	Pwr. Supp. Bypass
19	500	500	129-2	MC245	MO.5-35	1FM-35	1468-0005	5W5T5	Audio Plate Bypass
20A	100		129-161	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Diode Filter
B	100			MC235	MO.5-31	1FM-31	1468-0001	5W5T1	" "
21	200	500	129-21	MC237	MO.5-32	1FM-32	1468-0002	5W5T2	Osc. Grid Capacitor
22	500	500	129-2	MC245	MO.5-35	1FM-35	1468-0005	5W5T5	RF Coupling
23	80	500	129-188						Fixed Padder

*Not used in all models.

CONTROLS

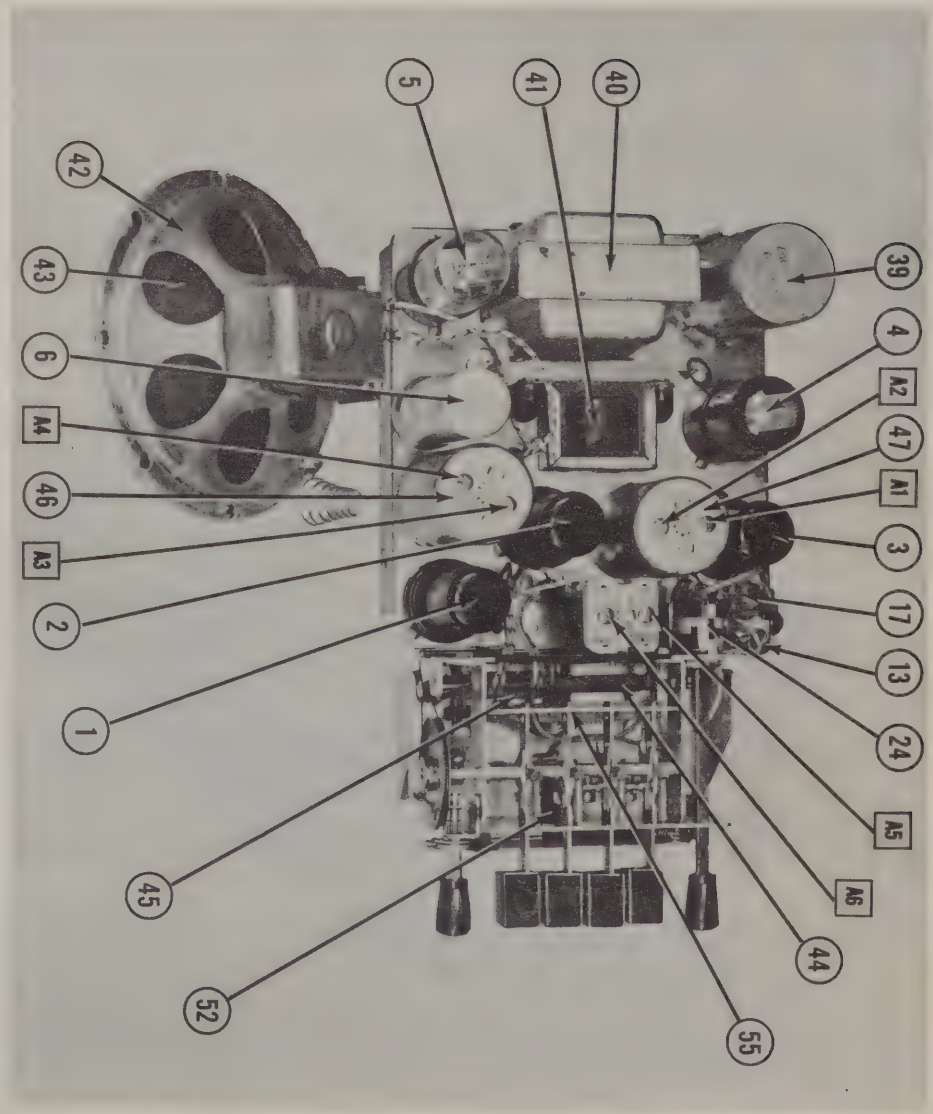
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
24	1 Meg.	1	101276				Volume Control & Switch

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
25	1 Meg.	½	C-9B1-31	BTS-1 Meg.	Br.-Blk.-Grn. Converter Grid
26	33KΩ	½	C-9B1-22	BTS-33K	Or.-Or.-Or. Oscillator Grid
27	15KΩ	1	C-9B2-76	BTA-15K	Br.-Grn.-Or. Screen Dropping
28	150Ω	½	C-9B1-52	BW-½-150	Br.-Grn.-Br. IF Cathode
29	330Ω	½	C-9B1-56	BW-½-330	Or.-Or.-Br. IF Cathode - See Note
30	3.3 Meg.	½	C-9B1-34	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
31	47KΩ	½	C-9B1-23	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
32	4.7 Meg.	½	C-9B1-35	BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
33	220KΩ	½	C-9B1-27	BTS-220K	Red-Red-Yl. AF Plate Load
34	470KΩ	½	C-9B1-29	BTS-470K	Yl.-Vi.-Yl. Output Grid
35	680Ω	½	C-9B1-60	BTS-680	Blue-Gray-Br. Output Cathode
36	1500Ω	1	C-9B2-64	BTA-1500	Br.-Grn.-Red Filter
37	100Ω	½	C-9B1-50	BW-½-100	Br.-Blk.-Br. Hash Suppression
38	100Ω	½	C-9B1-50	BW-½-100	Br.-Blk.-Br. " "

Note-Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	RADIART PART No.	INSTALLATION NOTES
39	Interrupter	6.3	115~	12629	859	5307	

TRANSFORMER (VIBRATOR)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA: CORONADO PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
40	5.7V DC @ 2.2A	400V CT @ .034A			104295	P-4060**	T22R20**	P-2969**

**Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CORONADO PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
41	7000Ω	3.3Ω	680Ω	.6Ω	B-12C-10235	A-3878	T22S47	A-2931	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: CORONADO PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD RES.	VC IMP.				
42	4.7Ω	3.3Ω	B-18B-10236			
	CONE DIA.	VC DIA.				
43	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CORONADO PART No.	MEISSNER PART No.	
44	Ant. Coil		10Ω	C-211-10961		Items 44 & 45 are slug tuned and ganged together and are part of Tuning Assembly.
45	Osc. Coil	.5Ω	6Ω			
46	Input IF	25Ω	43Ω	108139B	16-6658	
47	Output IF	11Ω	16Ω	108211	16-6660	
48	A. Choke		0Ω	10568		
49	" "		0Ω	10568		
50	" "		0Ω	10566		
51	Ant. Choke		.5Ω	A-16A-13261		

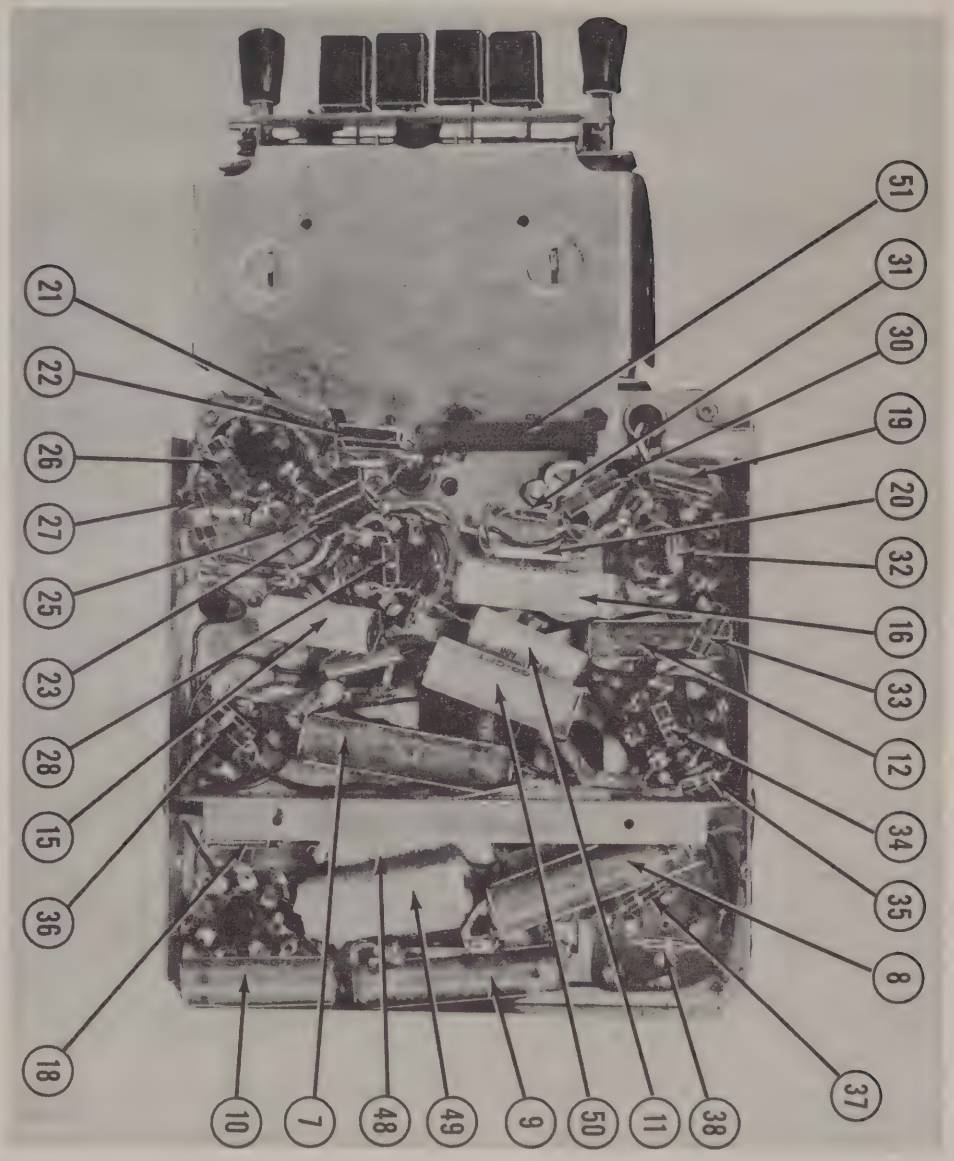
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: CORONADO PART No.		INSTALLATION NOTES
52	Bayonet	7.5	0.20	White	10797		Type 51

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
53	Fuse	131225	SFE14
54	Spark Plate	11749B	
55	Tuning Assy.	C-211-10961	
	Dial Scale	A-6D-10740	
	Pointer	11121027	

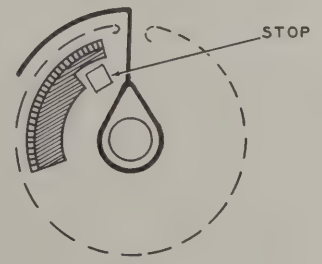
CHASSIS—BOTTOM VIEW



MODEL 42-5006

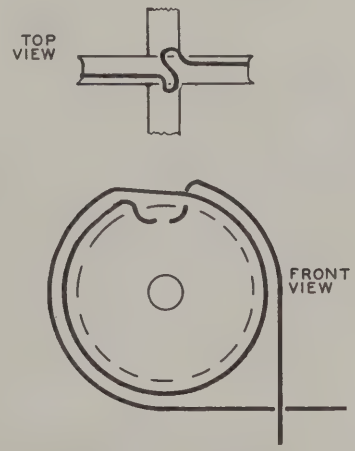
PUSHBUTTON ADJUSTMENTS

1. Make a list of four desired stations.
2. Turn on receiver and allow to warm up for 10 to 15 minutes.
3. Remove four plastic pushbuttons by pulling out.
4. Depress left pushbutton lever and loosen locking screw accessible through hole under pushbutton.
5. Hold in pushbutton lever and tune in first desired station and tighten locking screw. This button is now set.
6. Follow same procedure for remaining buttons.
7. Replace plastic pushbuttons.

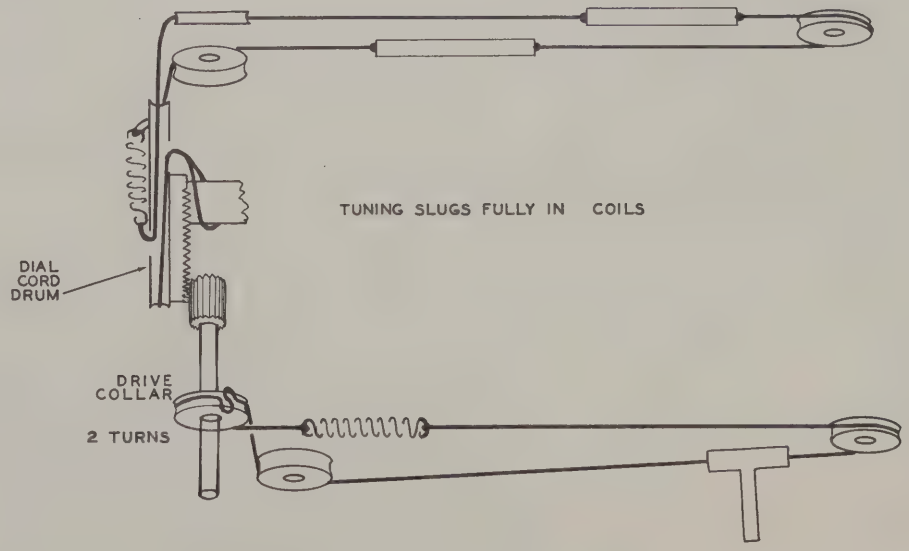


SIDE VIEW

DIAL CORD DRUM



DRIVE COLLAR



DIAL CORD DRUM

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0V.	0V.	190VDC	80VDC	-9.4VDC§	0V.	6.1VDC	-.1VDC
2	6SK7	0V.	0V.	0V.	-.7VDC	1.3VDC	80VDC	6.1VDC	190VDC
3	6SQ7	0V.	-.7VDC	0V.	-.7VDC	-.6VDC	90VDC	0V.	6.1VDC
4	6K6GT	0V.	6.1VDC	210VDC	190VDC	0V.	0V.	0V.	14.5VDC
5	6X5GT	0V.	6.1VDC	245VAC	0V.	245VAC	0V.	0V.	220VDC

RESISTANCE READINGS

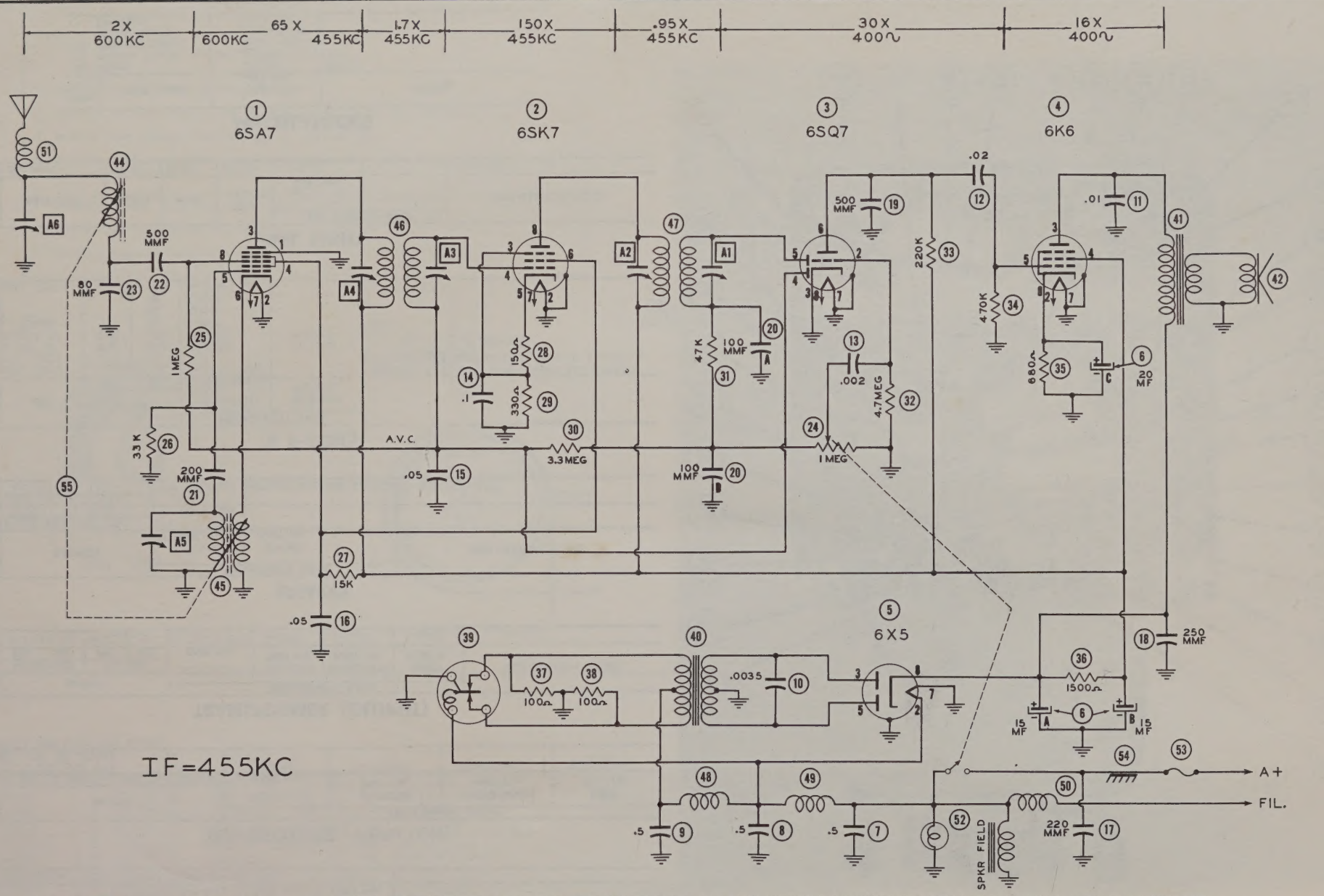
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0Ω	0Ω	50KΩ	65KΩ	35KΩ	.4Ω	.1Ω	5 Meg.
2	6SK7	0Ω	0Ω	0Ω	4 Meg.	150Ω	65KΩ	.1Ω	50KΩ
3	6SQ7	0Ω	5 Meg.	0Ω	4 Meg.	1 Meg.	270K	0Ω	.1Ω
4	6K6GT	0Ω	.1Ω	50KΩ	50KΩ	500KΩ	INF.	0Ω	680Ω
5	6X5GT	0Ω	.1Ω	210Ω	INF.	180Ω	INF.	0Ω	50KΩ

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6.3 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DATE 11/47 SET #23 FOLDER #4718-36



A PHOTOFACT STANDARD NOTATION SCHEMATIC THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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4718-36

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.